

CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE EMORY RIVER WATERSHED.

4.1 Background

4.2 Characterization of HUC-11 Subwatersheds

4.2.A. 06010208010

4.2.B. 06010208020

4.2.C. 06010208030

4.2.D. 06010208040

4.2.E. 06010208050

4.2.F. 06010208060

4.2.G. 06010208070

4.2.H. 06010208080

4.2.I. 06010208090

4.2.J. 06010208100

4.2.K. 06010208110

4.2.L. 06010208120

4.2.M. 06010208130

4.2.N. 06010208140

4.2.O. 06010208150

4.1 BACKGROUND. This chapter is organized by HUC-11 subwatershed, and the description of each subwatershed is divided into four parts:

- i. General description of the subwatershed
- ii. Description of point source contributions
- ii.a. Description of facilities discharging to water bodies listed on the 1998 303(d) list
- iii. Description of nonpoint source contributions

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 1.1 beta (developed by Tetra Tech, Inc for EPA Region 4) released in 2000.

WCS integrates with ArcView® v3.1 and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

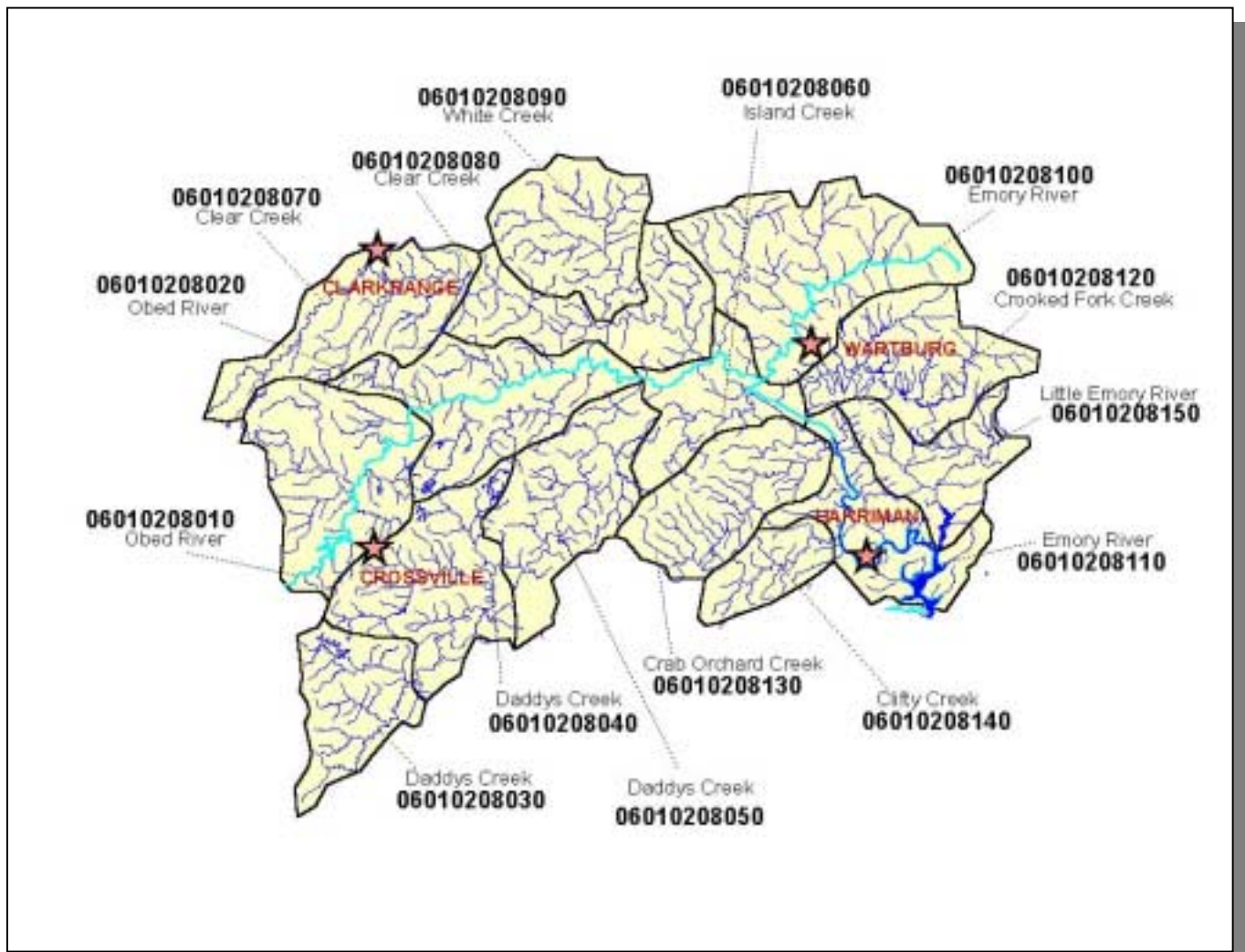


Figure 4-1. The Emory River Watershed is Composed of Fifteen USGS-Delineated Subwatersheds (11-Digit Subwatersheds). Locations of Clarkrange, Crossville, Harriman, and Wartburg are shown for reference.

4.2. CHARACTERIZATION OF HUC-11 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region 4 were used to characterize each subwatershed in the Emory River Watershed. HUC-14 polygons were aggregated to form the HUC-11 boundaries for data analysis.

HUC-11	HUC-14
06010208010	06010208010010 (Little Obed River) 06010208010020 (Drowning Creek)
06010208020	06010208010030 (Obed River) 06010208010040 (Obed River)
06010208030	06010208020010 (Daddys Creek)
06010208040	06010208020020 (Daddys Creek)
06010208050	06010208020030 (Daddys Creek)
06010208060	06010208040040 (Island creek)
06010208070	06010208030010 (Clear Creek)
06010208080	06010208030020 (Clear Creek)
06010208090	06010208030030 (White Creek)
06010208100	06010208040010 (Emory River) 06010208040020 (Emory River)
06010208110	06010208040030 (Emory River)
06010208120	06010208040050 (Crooked Fork Creek)
06010208130	06010208040060 (Crab Orchard Creek)
06010208140	06010208040070 (Clifty Creek)
06010208150	06010208040080 (Little Emory River)

Table 4-1. HUC-14 Drainage Areas are Nested Within HUC-11 Drainages. USGS delineated the HUC-11 drainage areas. NRCS inventories and manages the physical database for HUC-14 drainage areas.

4.2.A. 06010208010.

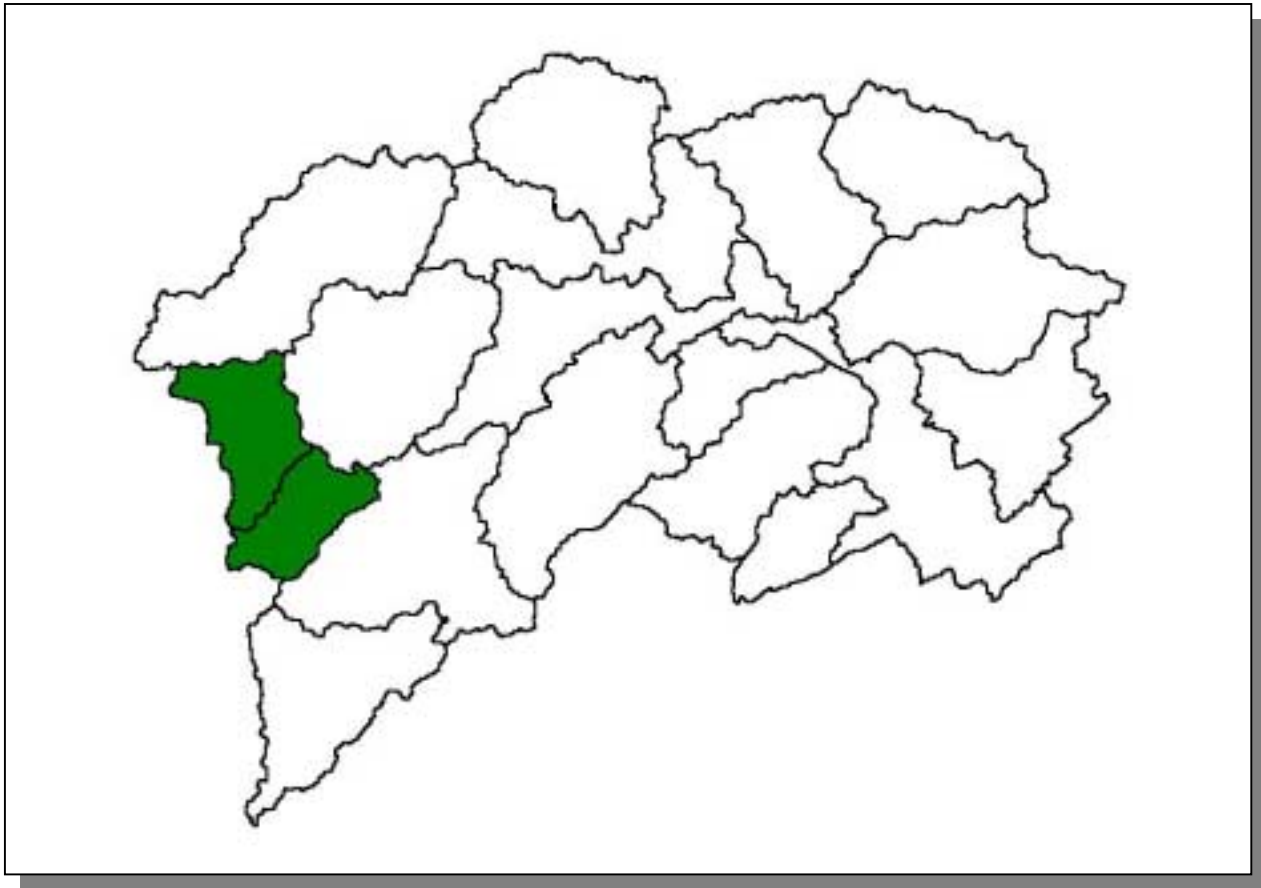


Figure 4-2. Location of Subwatershed 06010208010. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.A.i. General Description.

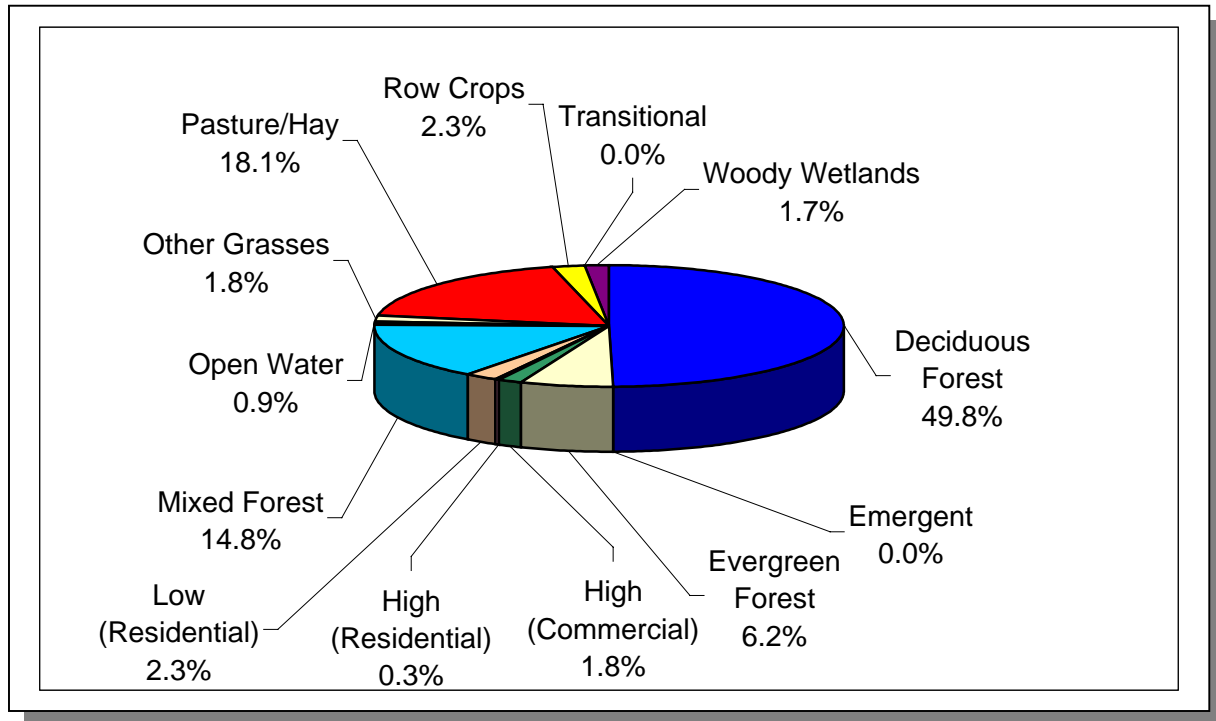


Figure 4-3. Land Use Distribution in Subwatershed 06010208010. More information is provided in Emory-Emory-Appendix IV.

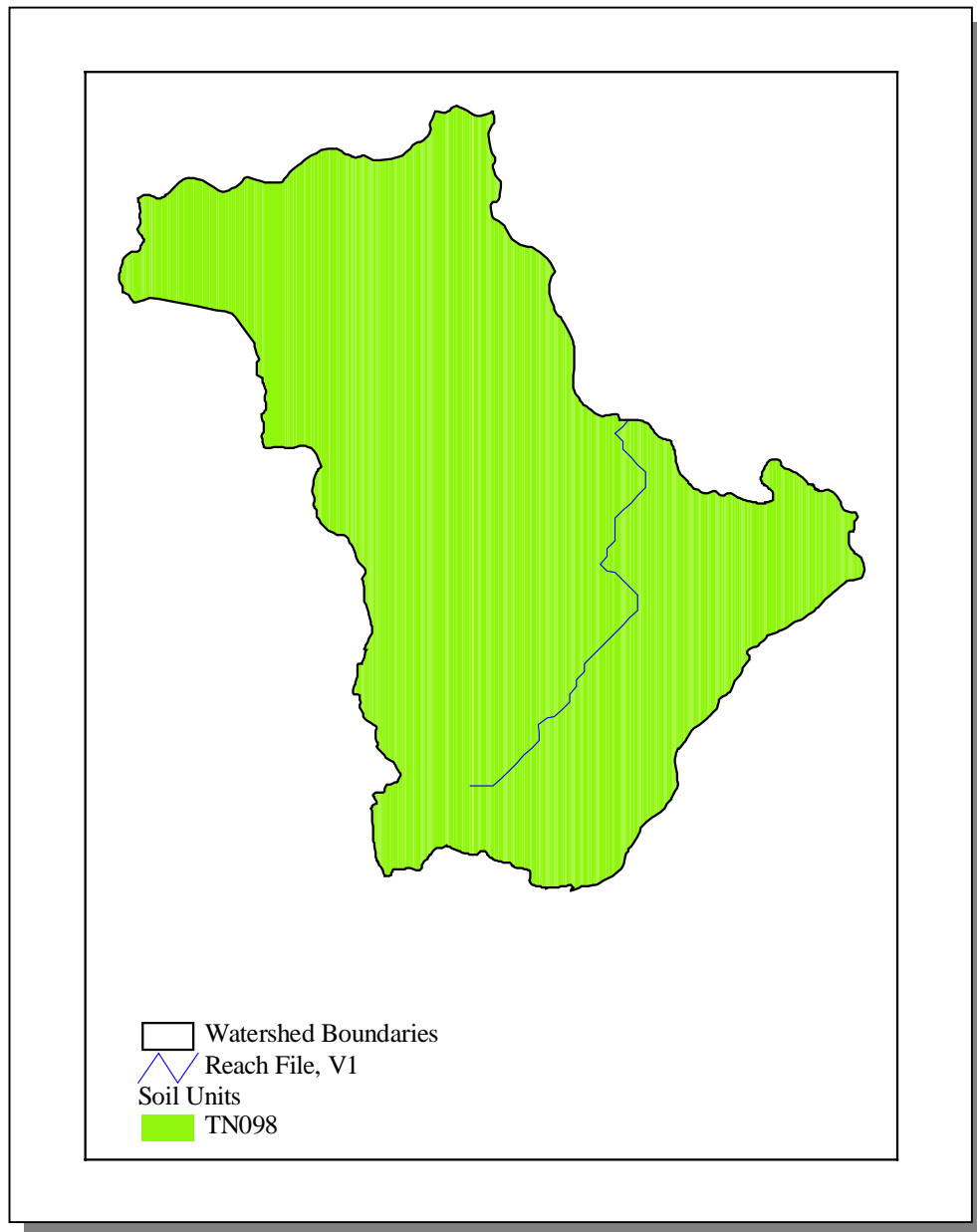


Figure 4-4. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208010.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN098	1.00	C	3.98	4.82	Loam	0.32

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 6010208010. More details are provided in Emory-Emory-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Cumberland	34,736	43,217	7.01	2,434	3,028	24.4

Table 4-3. Population Estimates in Subwatershed 06010208010.

Populated Place	County	Population	Total	NUMBER OF HOUSING UNITS		
				Public Sewer	Septic Tank	Other
Crossville	Cumberland	6,930	3,054	2,504	541	9

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208010.



Figure 4-5. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208010. Subwatershed 06010208010010 and 06010208010020 boundaries are shown for reference. More information is provided in Emory-Emory-Appendix IV.

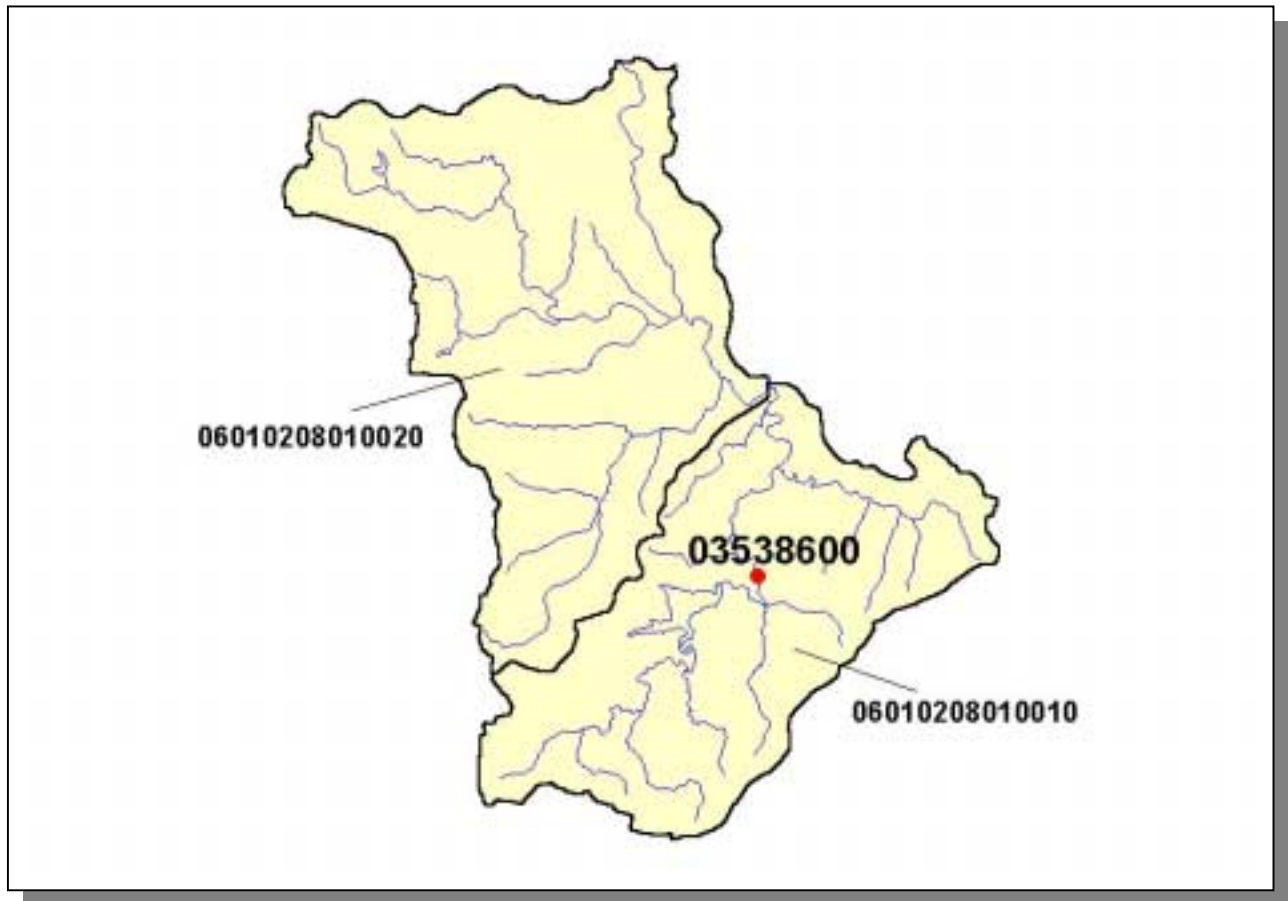


Figure 4-6. Location of STORET Monitoring Sites in Subwatershed 06010208010. Subwatershed 06010208010 and 06010208020 boundaries are shown for reference. More information is provided in Emory-Emory-Appendix IV.

4.2.A.ii Point Source Contributions.



Figure 4-7. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208010. Subwatershed 06010208010010 and 06010208010020 boundaries are shown for reference. More information, including the names of facilities, is provided in Emory-Emory-Appendix IV.



Figure 4-8. Location of ARAP Sites (Individual Permits) in Subwatershed 06010208010. Subwatershed 0601020801010 and 06010208010020 boundaries are shown for reference. More information is provided in Emory-Emory-Appendix IV.



Figure 4-9. Location of Wetland Impact Sites in Subwatershed 06010208010. Impact sites are from ARAP database. Subwatershed 06010208010010 and 06010208010020 boundaries are shown for reference. More information is provided in Emory-Emory-Appendix IV.

4.2 A.ii.a. Dischargers to Waterbodies Listed on the 1998 303(d) List.

There is one NPDES facility discharging to water bodies listed on the 1998 303(d) list in Subwatershed 06010208010:

- TN0024996 discharges to the Obed River @ RM 38.6



Figure 4-10. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208010. Subwatershed 06010208010010 and 06010208010020 boundaries are shown for reference. The names of facilities are provided in Emory-Emory-Appendix IV.

PERMIT #	7Q10	1Q20	30Q2	QDESIGN
TN0024996	0	0	0	3.5

Table 4-5. Receiving Stream Flow Information for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208010. Data are in million gallons per day (MGD). Data were calculated using data in Flow Duration and Low Flows of Tennessee Streams Through 1992.

PERMIT #	CBOD ₅	NH ₃	FECAL	WET
TN0024996	X	X	X	X

Table 4-6. Monitoring Requirements for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208010.

PERMIT #	TSS	NH ₃	CBOD ₅	FECAL	BYPASS	DURATION
TN0024996	1	5	1	1	1	01/1995-12/1999

Table 4-7. Number of Permit Violations Based on DMR Data for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208010.

4.2.A.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Milk Cow	Cattle	Chickens	Hogs	Sheep
1,175	285	2,876	5	749	57

Table 4-8. Summary of Livestock Count Estimates in Subwatershed 06010208010. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5

Table 4-9. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010208010.

CROPS	TONS/ACRE/YEAR
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.23
Grass (Pastureland)	0.40
Grass, Forbs, Legumes (Mixed (Pasture)	0.26
Forest Land (Grazed)	0.00
Corn (Row Crops)	3.77
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crop	14.05
Grass (Hayland)	3.05
Legume Grass (Hayland)	0.16
Legume (Pastureland)	0.15

Table 4-10. Annual Estimated Total Soil Loss in Subwatershed 06010208010.

4.2.B. 06010208020

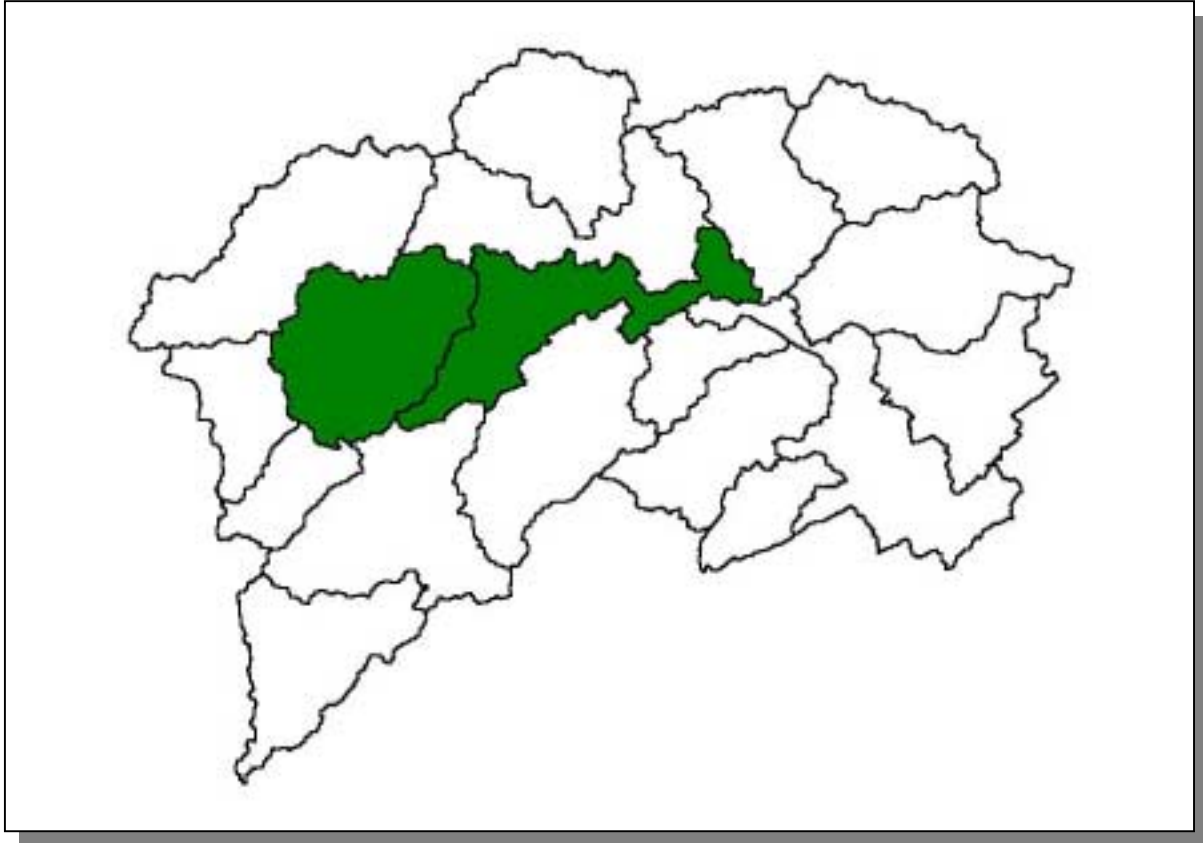


Figure 4-11. Location of Subwatershed 06010208020. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.B.i. General Description.

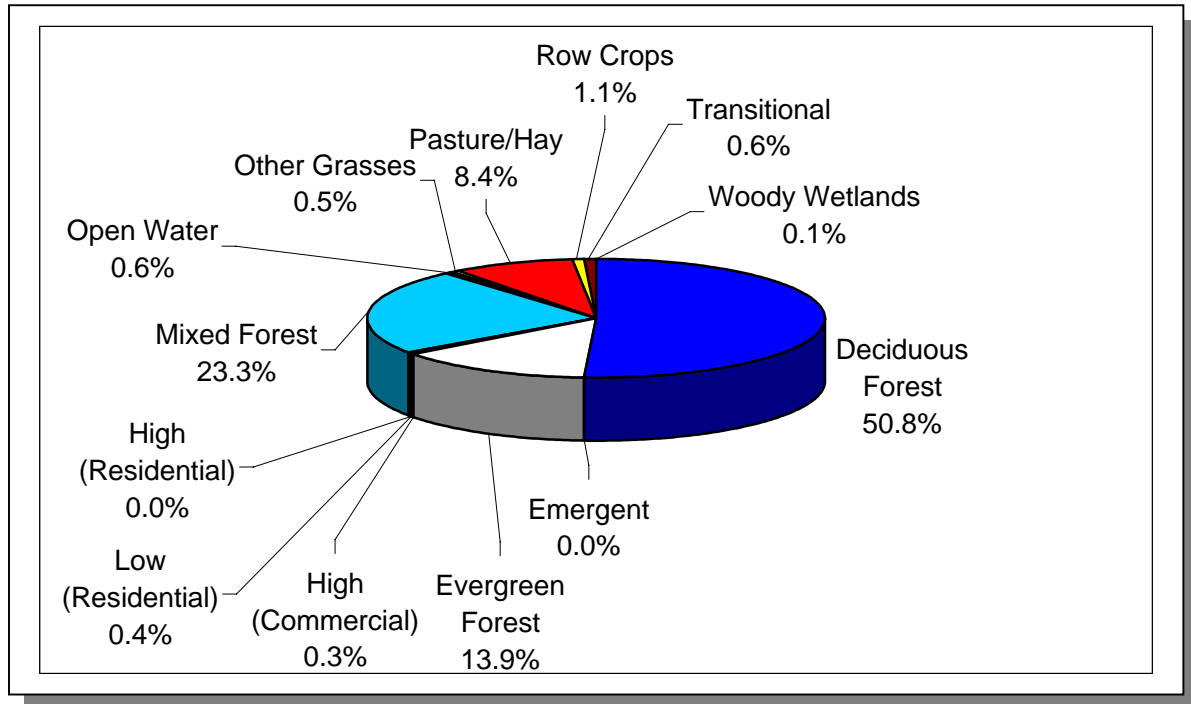


Figure 4-12. Land Use Distribution in Subwatershed 06010208020. More information is provided in Emory-Emory-Appendix IV.

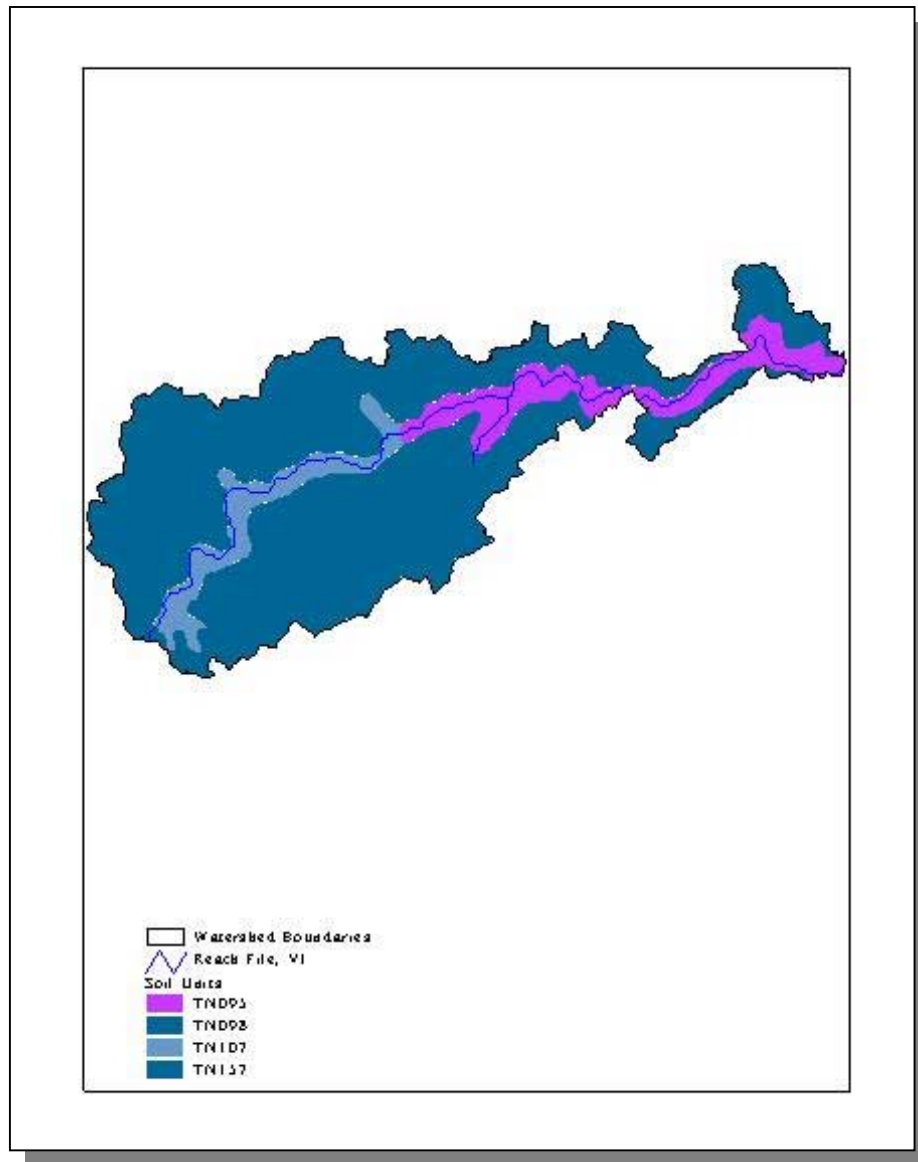


Figure 4-13. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208020.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28
TN157	0.00	B	2.38	4.62	Loam	0.28

Table 4-11. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208020. More information is provided in Emory-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	14	4,861	6,048	24.4
Morgan	17,300	18,521	3.93	680	728	7.1
Totals	52,036	61,738		5,541	6,776	22.3

Table 4-12. Population Estimates in Subwatershed 06010208020.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Crossville	Cumberland	6,930	3,054	2,504	541	9

Table 4-13. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208020.

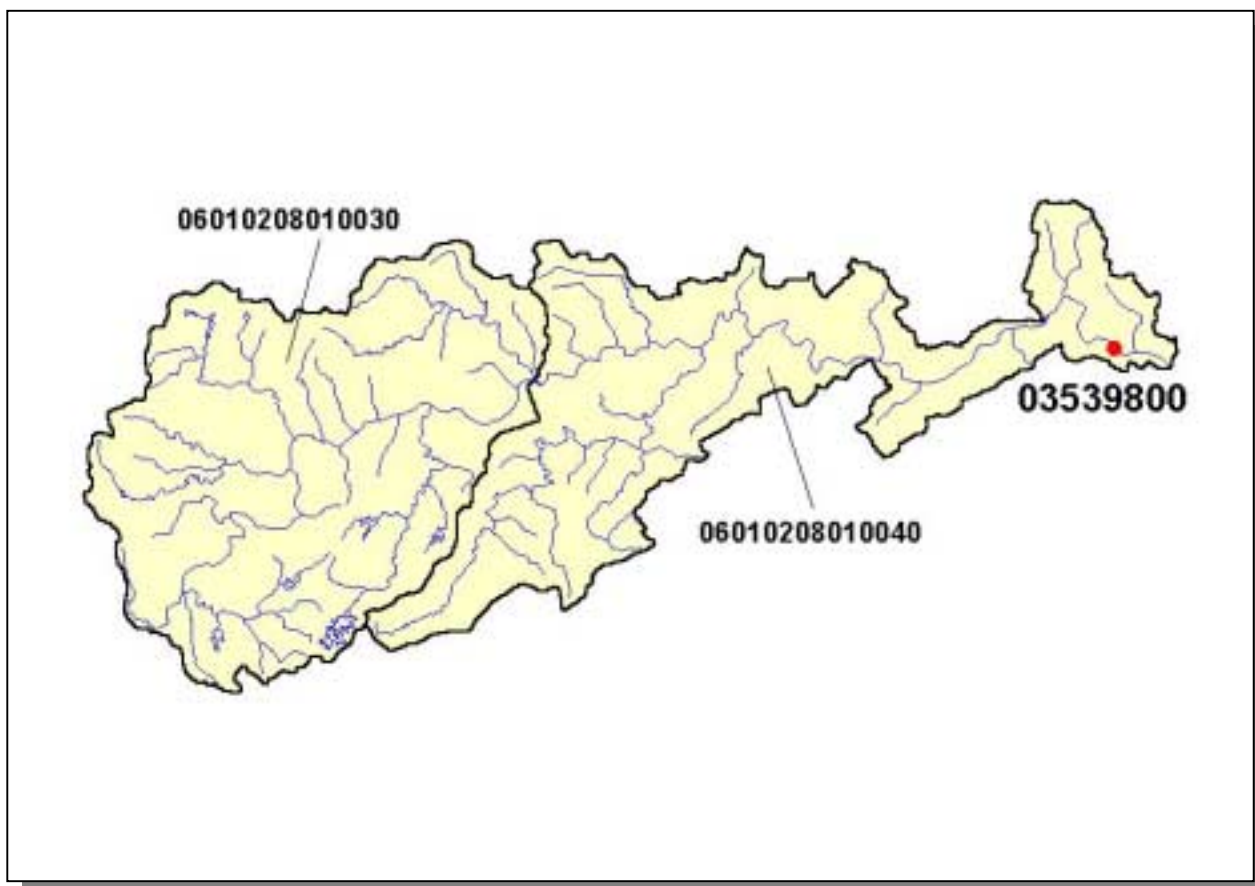


Figure 4-14. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208020. Subwatershed 06010208010030 and 06010208010040 boundaries are shown for reference. More information is provided in Emory-Appendix IV.

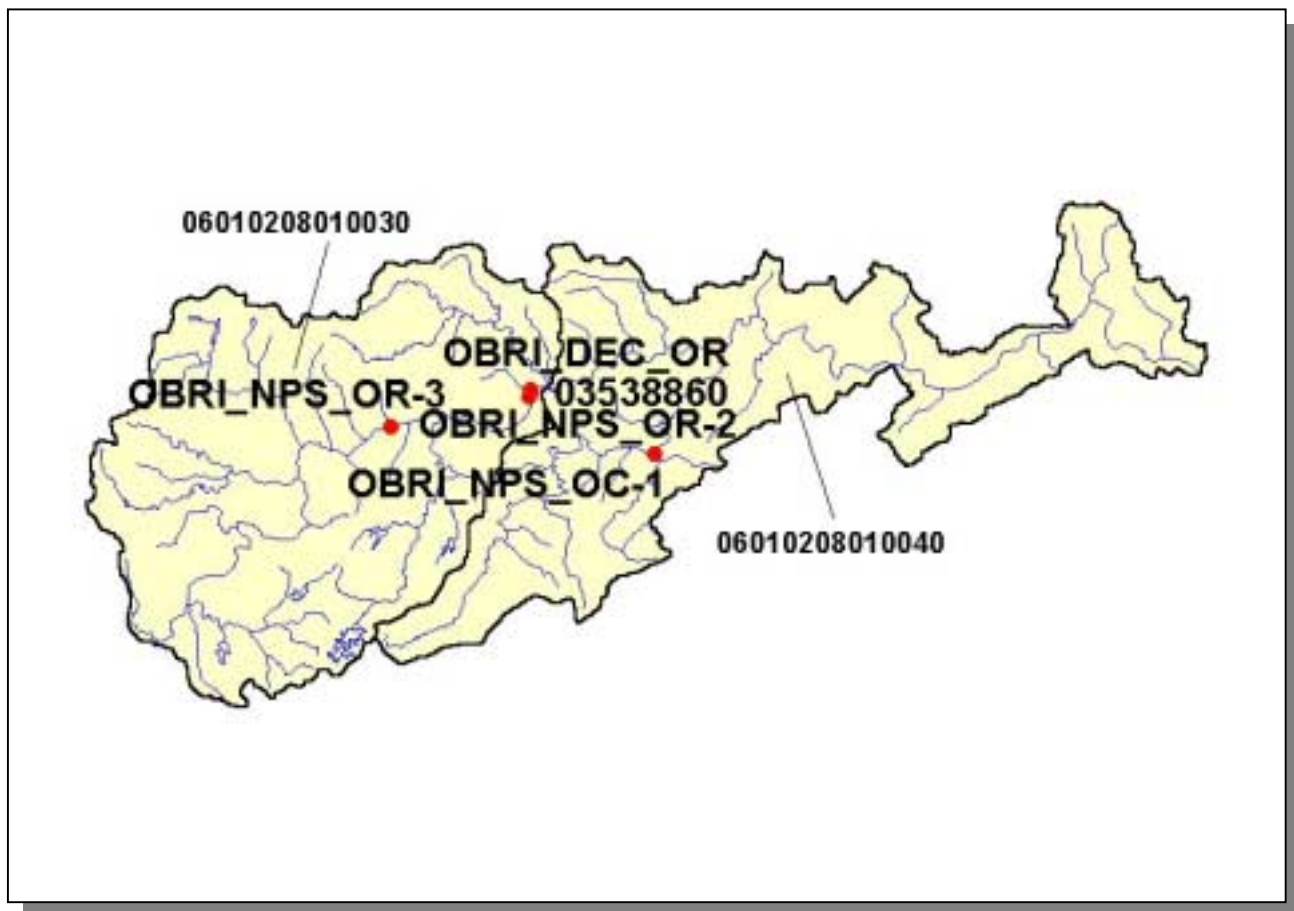


Figure 4-15. Location of STORET Monitoring Sites in Subwatershed 06010208020. Subwatershed 06010208010030 and 06010208010040 boundaries are shown for reference. More information is provided in Emory-Appendix IV.

4.2.B.ii. Point Source Contributions.

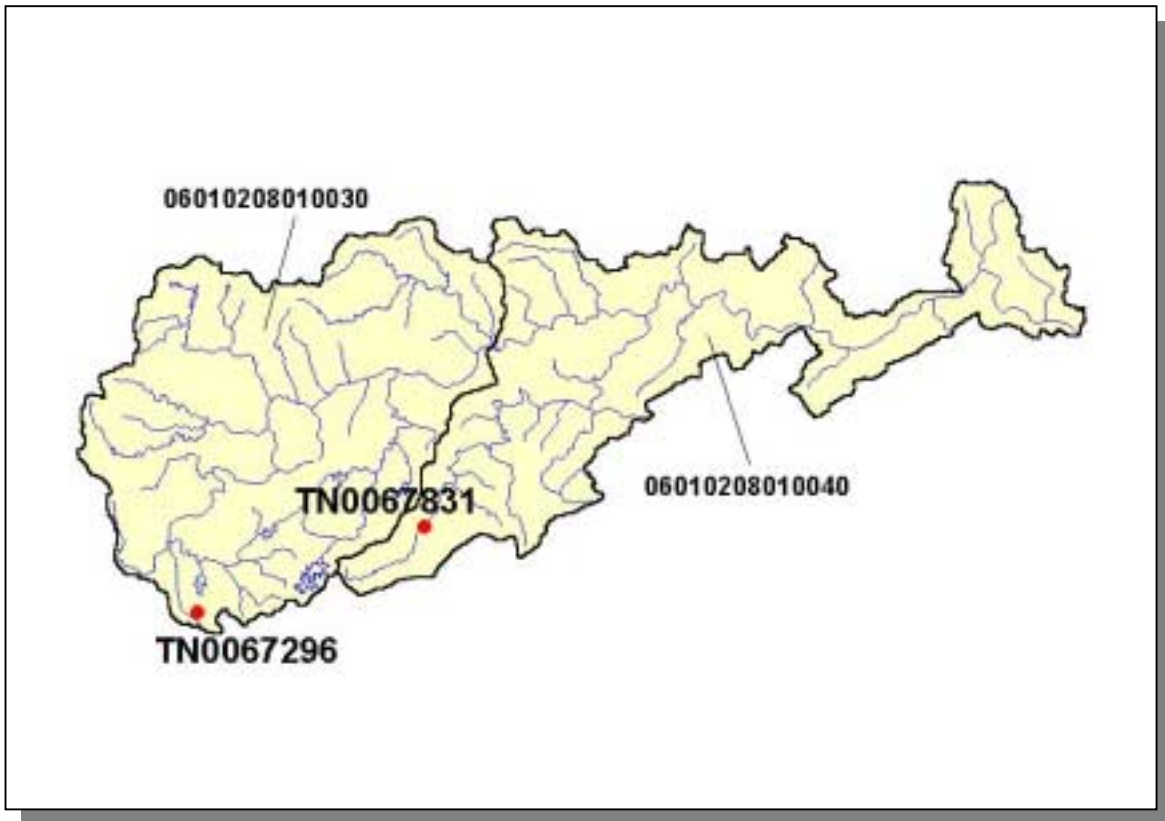


Figure 4-16. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208020. Subwatershed 06010208010030 and 06010208010040 boundaries are shown for reference. More information, including the names of facilities, is provided in Emory-Appendix IV.

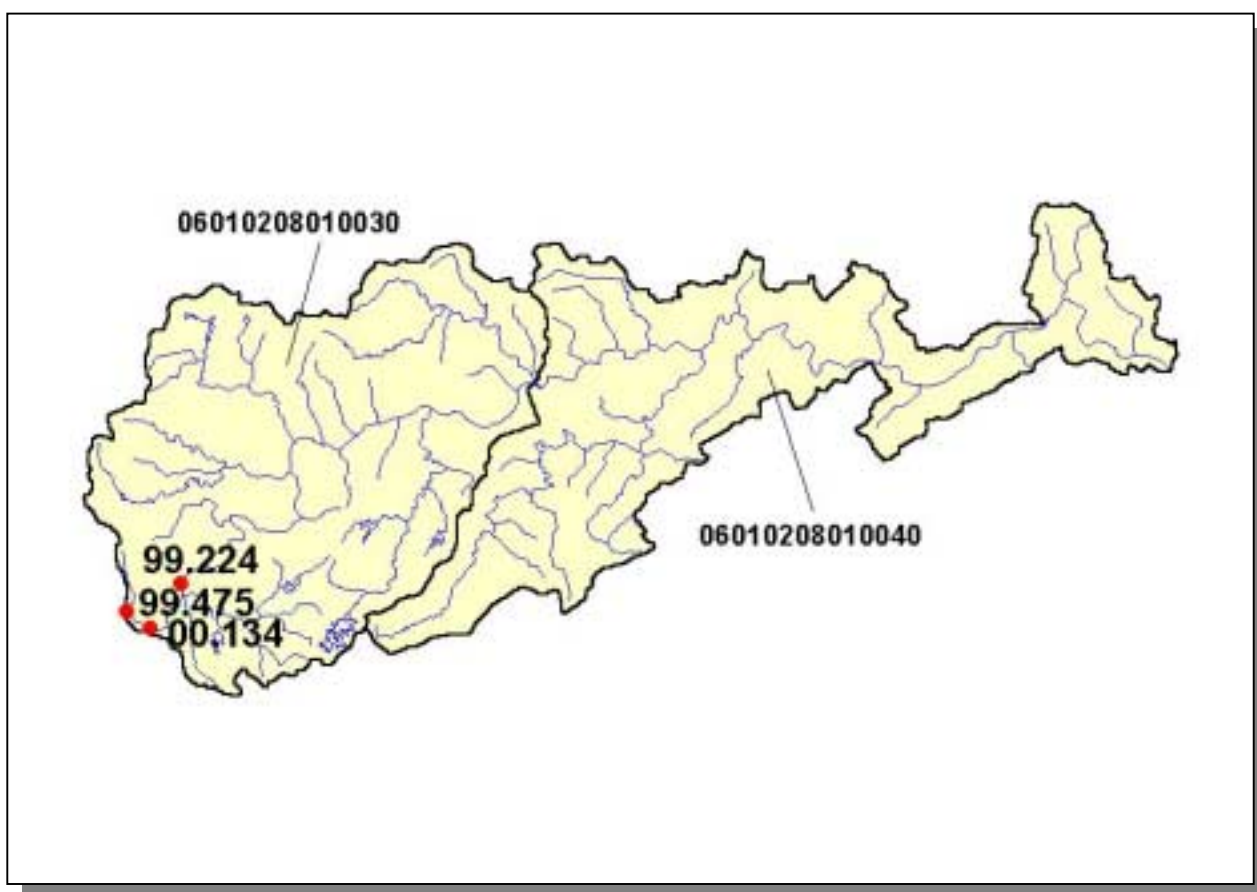


Figure 4-17. Location of ARAP Sites (Individual Permits) in Subwatershed 06010208020. Subwatershed 06010208010030 and 06010208010040 boundaries are shown for reference. More information is provided in Emory-Appendix IV.

4.2.B.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
1,362	3,269	308	6	36,693	797	62

Table 4-14. Summary of Livestock Count Estimates in Subwatershed 06010208020. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Morgan	287.8	276.2	3.5	10.9
Total	608.1	596.5	9.4	33.4

Table 4-15. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208020.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.40
Grass, Forbs, Legumes (Mixed Pasture)	0.23
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.20
Non Agricultural Land Use	0.00
Corn (Row Crops)	4.37
Grass (Hayland)	2.65
Legume Grass (Hayland)	0.17
Forest Land (Grazed)	0.00
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crop	14.05
Legume (Pastureland)	0.15

Table 4-16. Annual Estimated Total Soil Loss in Subwatershed 06010208020.

4.2.C. 06010208030.



Figure 4-18. Location of Subwatershed 06010208030. All Emory HUC-14 subwatershed boundaries are shown for reference.

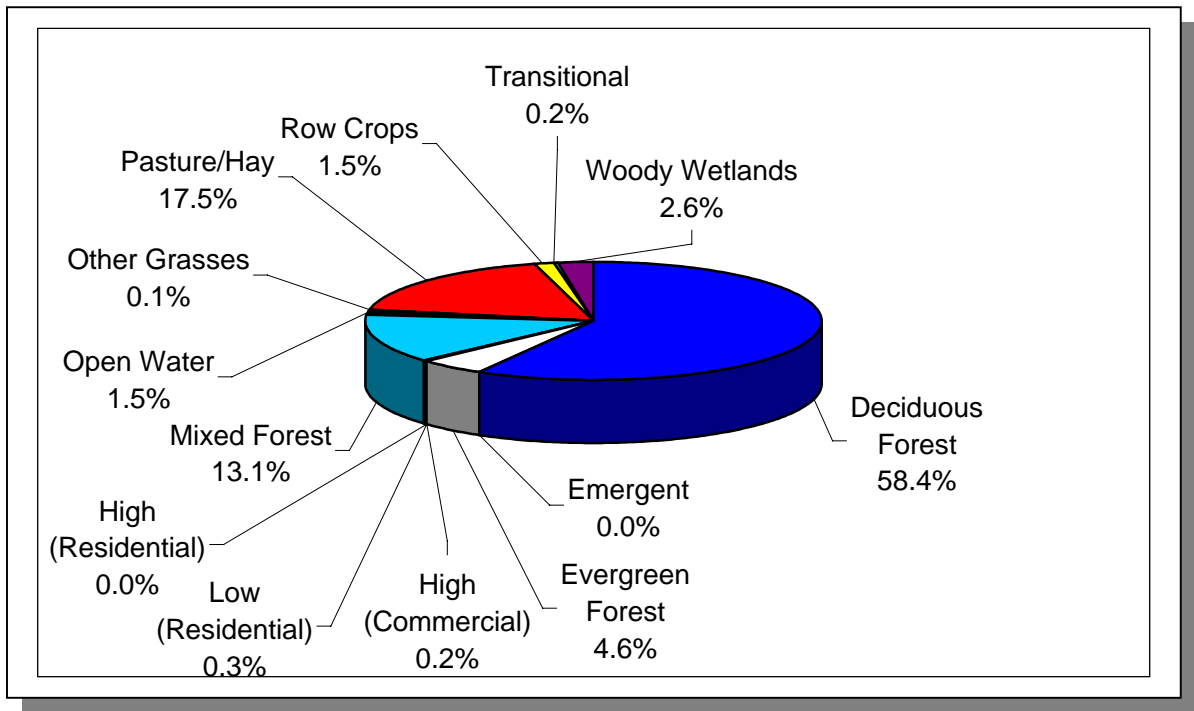


Figure 4-19. Land Use Distribution in Subwatershed 06010208030. More information is provided in Emory-Appendix IV.

4.2.C.i. General Description.

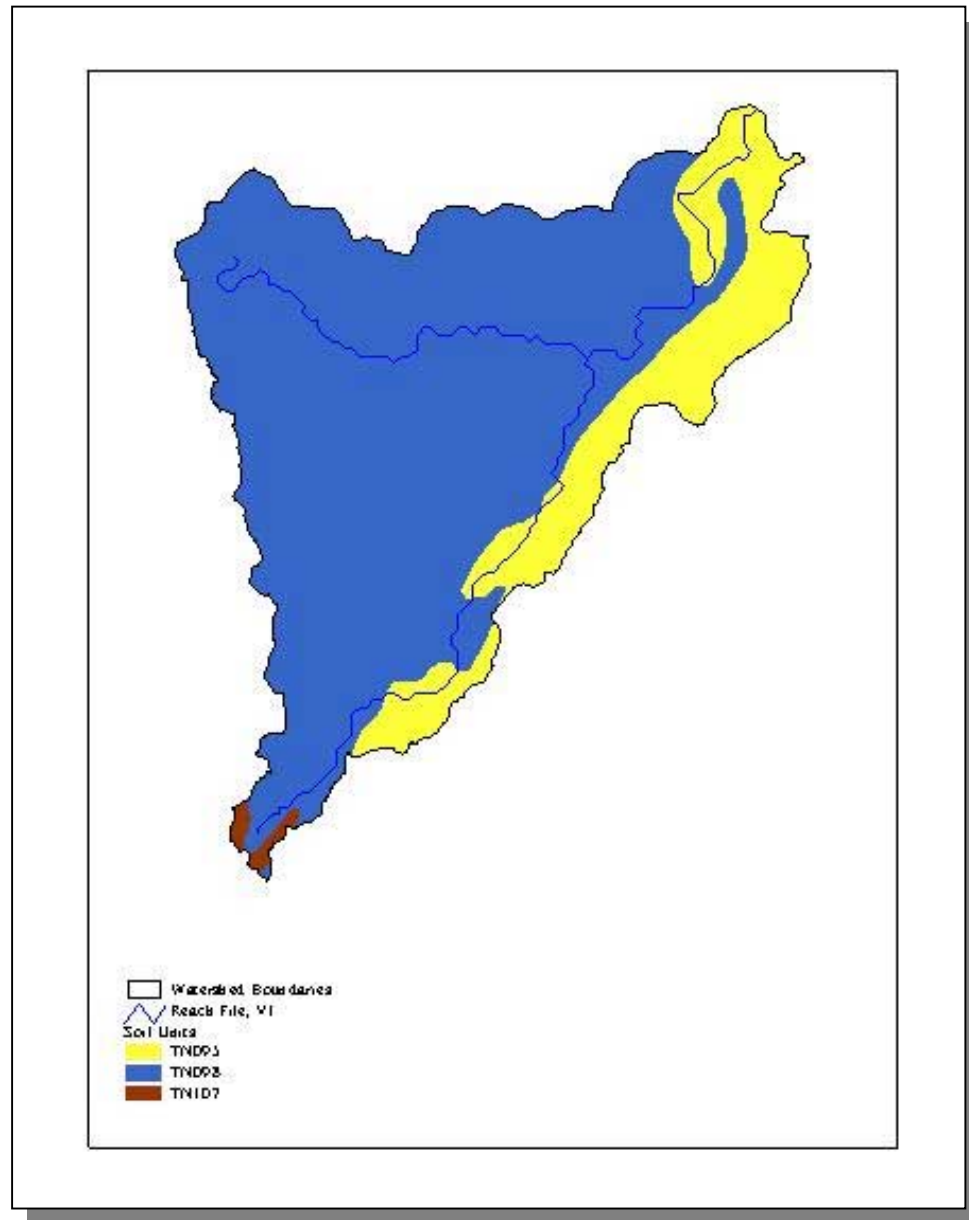


Figure 4-20. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208030.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28

Table 4-17. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208030. More information is provided in Emory-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Bledsoe	9,669	10,650	0.49	47	52	10.6
Cumberland	34,736	43,217	6.61	2,297	2,857	24.4
Totals	44,405	53,867		2,344	2,909	24.1

Table 4-18. Population Estimates in Subwatershed 06010208030.



Figure 4-21. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208030. More information is provided in Emory-Appendix IV.

4.2.C.ii. Point Source Contributions.



Figure 4-22. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208030. More information, including the names of facilities, is provided in Emory-Appendix IV.



Figure 4-23. Location of ARAP Sites (Individual Permits) in Subwatershed 06010208030.
More information is provided in Emory-Appendix IV.

4.2.C.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
1,167	2,839	276	5	708	55

Table 4-19. Summary of Livestock Count Estimates in Subwatershed 06010208030.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Bledsoe	186.2	186.2	0.9	2.3
Cumberland	320.3	320.3	5.9	22.5
Total	506.5	506.5	6.8	24.8

Table 4-20. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208030.

CROPS	TONS/ACRE/YEAR
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.27
Grass (Pastureland)	0.41
Grass, Forbs, Legumes (Mixed Pasture)	0.27
Forest Land (Grazed)	0.00
Corn (Row Crops)	4.09
Soybeans (Row Crops)	6.20
Other Vegetable and Truck Crop	14.05
Grass (Hayland)	2.93
Legume Grass (Hayland)	0.20
Legume (Pastureland)	0.15
All Other Row Crops	4.45
Conservation Reserve Program Land	1.00
Wheat (Close Grown Cropland)	2.81

Table 4-21. Annual Estimated Total Soil Loss in Subwatershed 06010208030.

4.2.D. 06010208040.



Figure 4-24. Location of Subwatershed 06010208040. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.D.i. General Description.

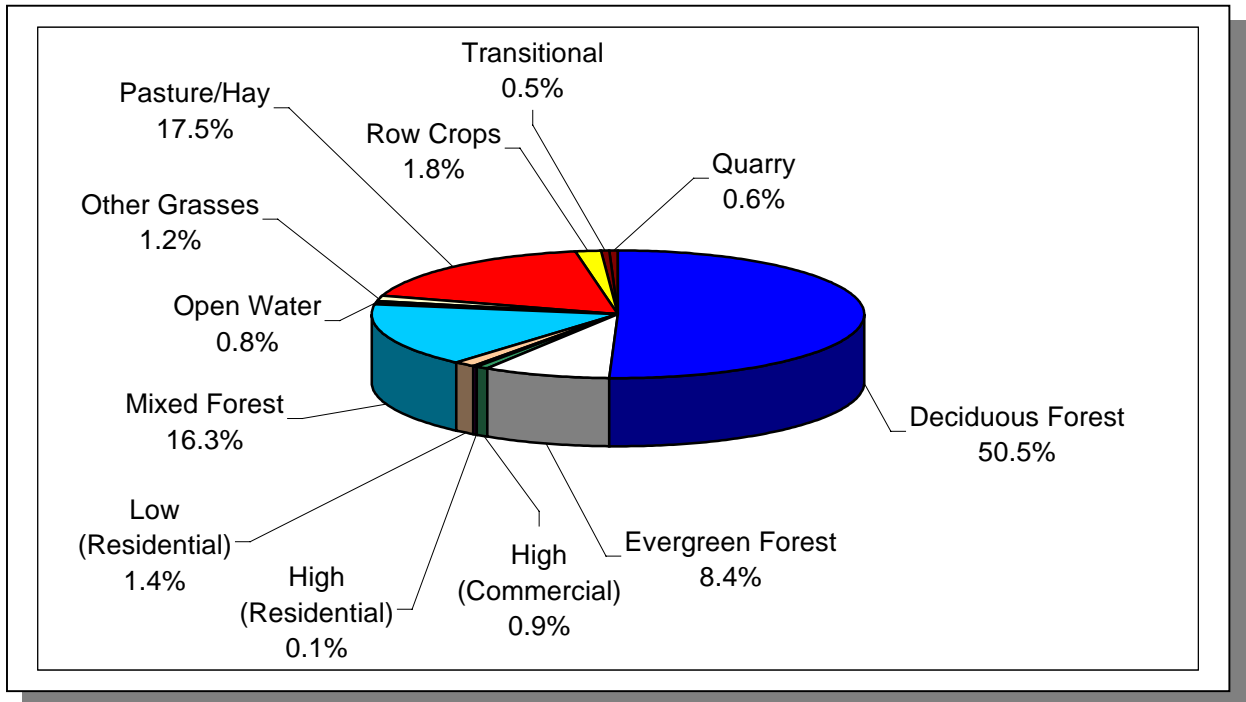


Figure 4-25. Land Use Distribution in Subwatershed 06010208040. More information is provided in Emory-Appendix IV.

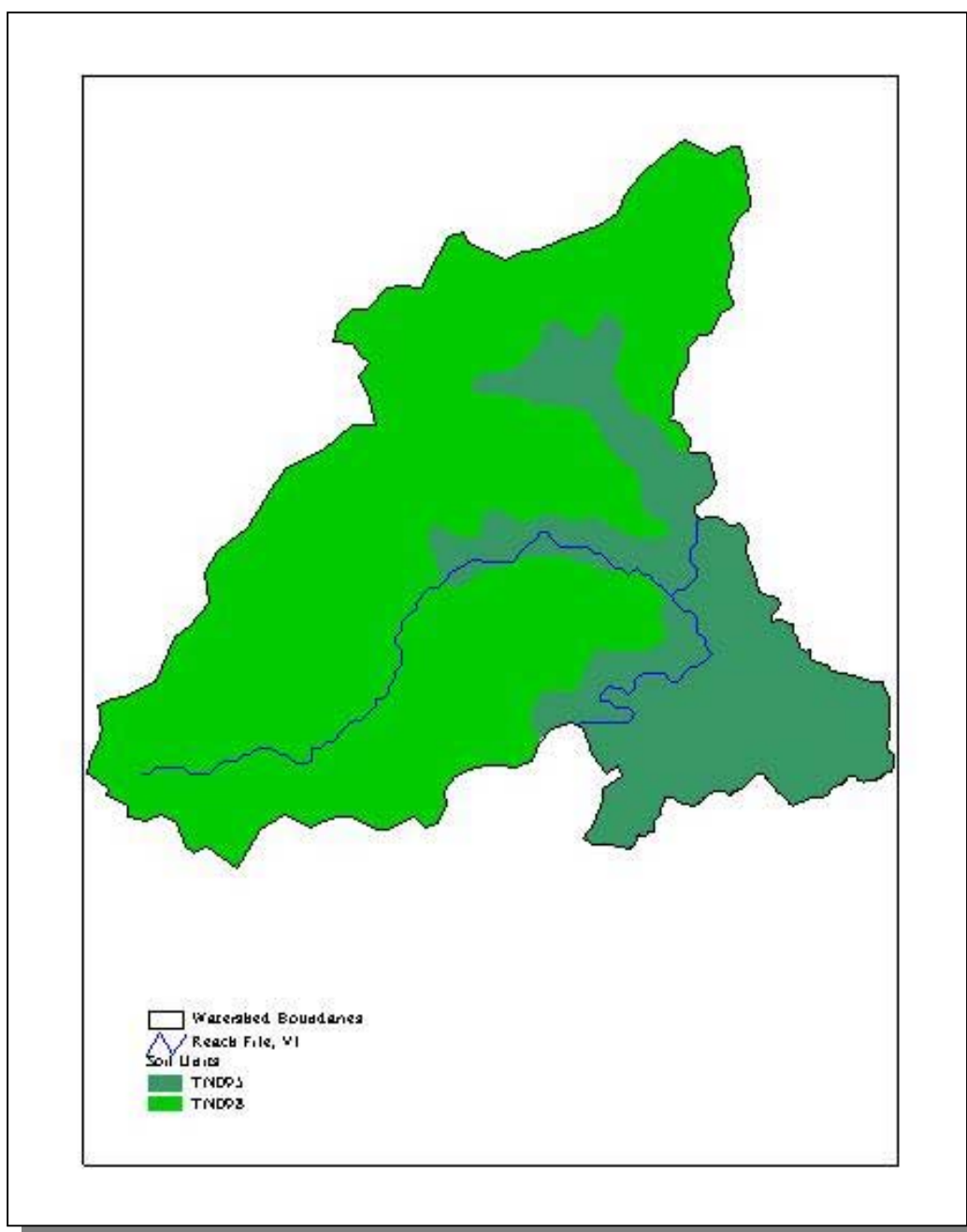


Figure 4-26. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208040.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32

Table 4-22. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208040. More information is provided in Emory-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	9.54	3,315	4,124	24.4

Table 4-23. Population estimates in Subwatershed 06010208040.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Crab Orchard	Cumberland	876	420	71	328	21
Crossville	Cumberland	6,930	3,054	2,504	541	9
Total		7,806	3,474	2,575	869	30

Table 4-24. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208040.

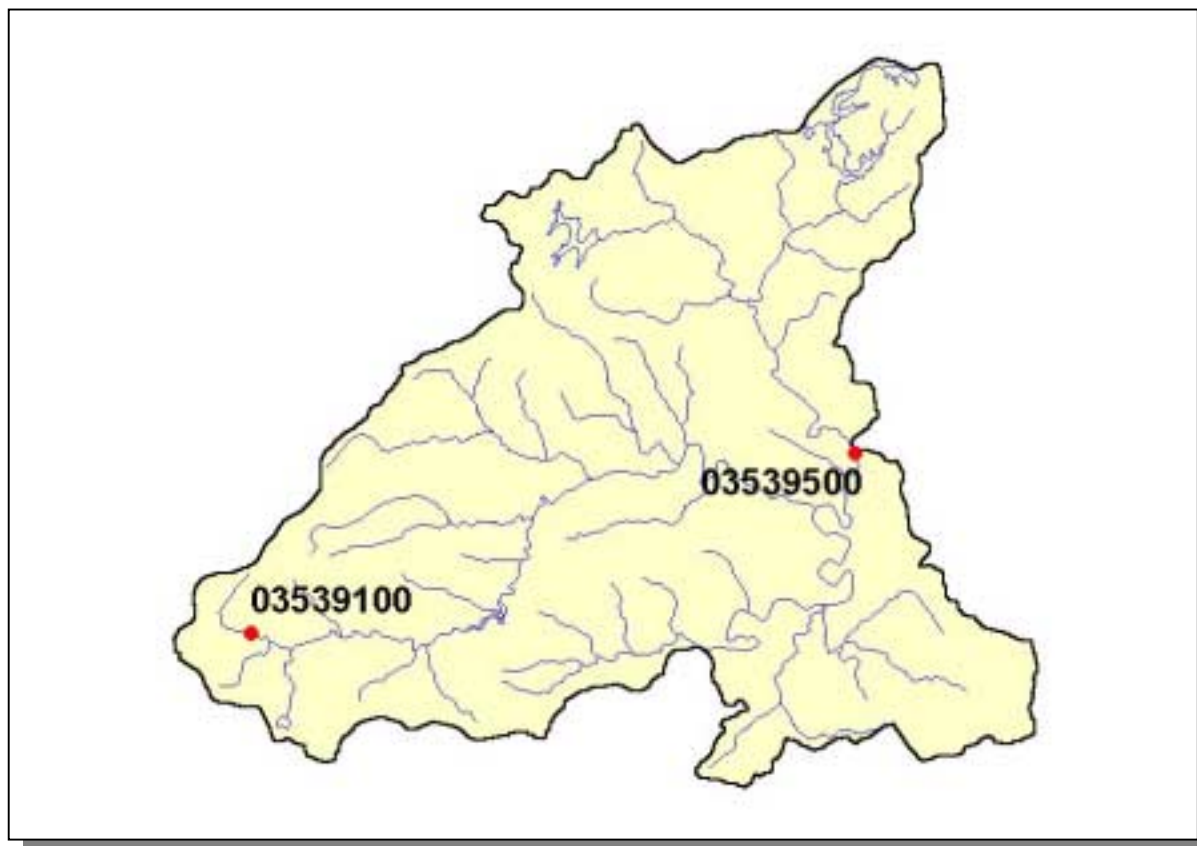


Figure 4-27. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208040. More information is provided in Emory-Appendix IV.

4.2.D.ii. Point Source Contributions.



Table 4-25. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208040. More information, including the names of facilities, is provided in Emory-Appendix IV.

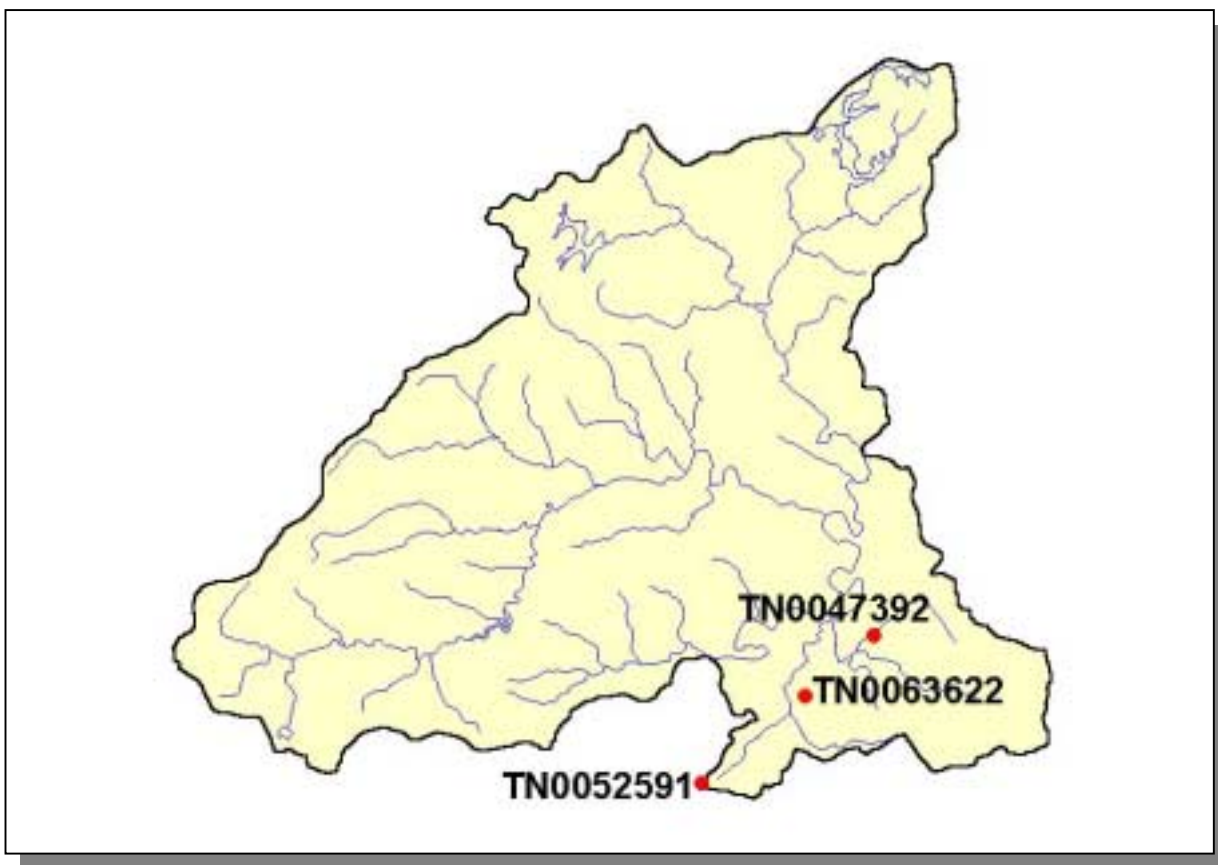


Figure 4-28. Location of Active Mining Sites in Subwatershed 06010208040. More information, including the names of facilities, is provided in Emory-Appendix IV.

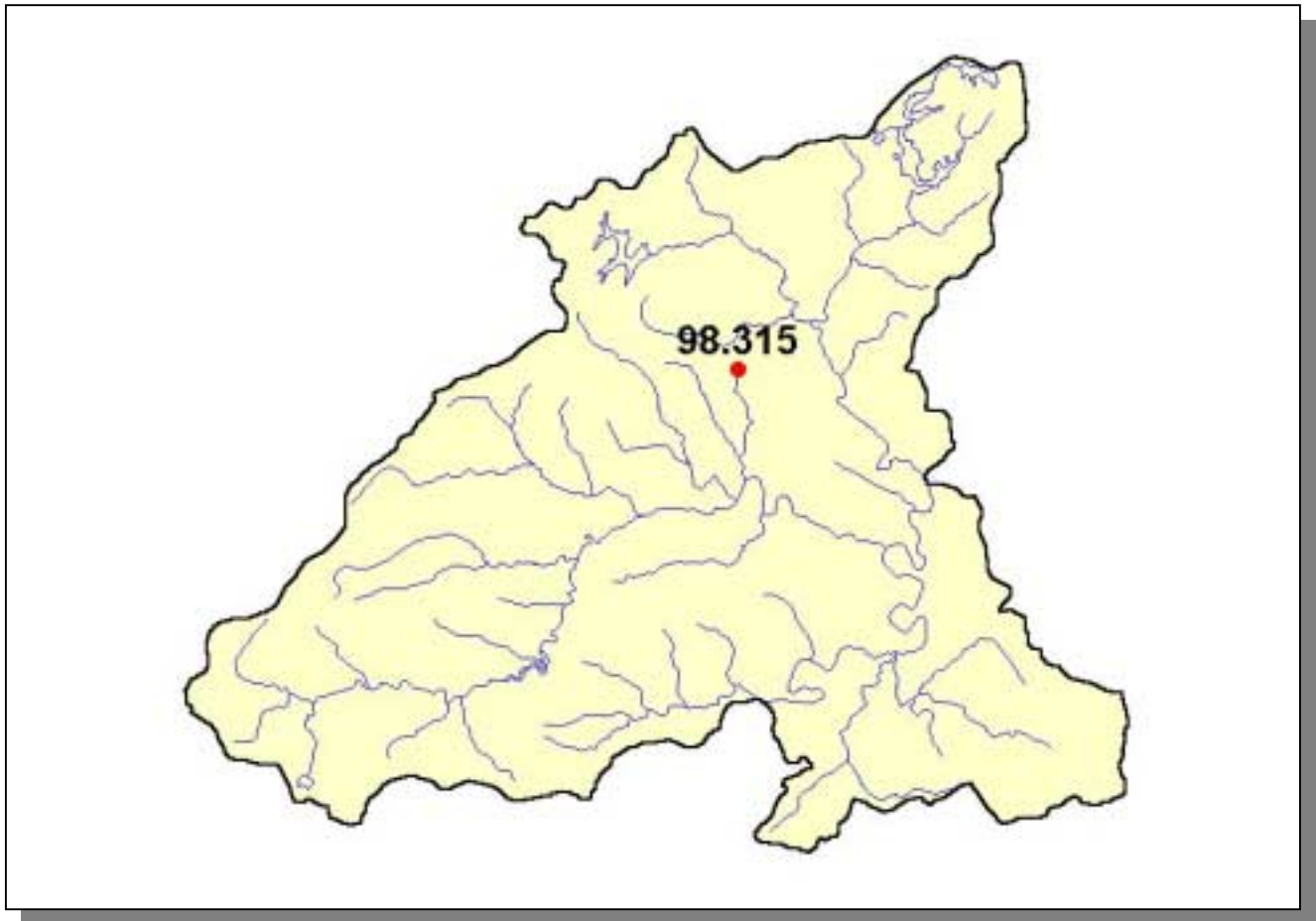


Figure 4-29. Location of ARAP Sites (Individual Permits) in Subwatershed 06010208040.
 More information is provided in Emory-Appendix IV.

4.2.D.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)					
Beef Cow	Cattle	Milk Cow	Chickens	Hogs	Sheep
1,551	3,797	376	7	989	76

Table 4-26. Summary of Livestock Count Estimates in Subwatershed 06010208040.
 According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5

Table 4-27. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208040.

CROPS	TONS/ACRE/YEAR
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.23
Grass (Pastureland)	0.40
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Corn (Row Crops)	3.77
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crop	14.05
Grass (Hayland)	3.05
Legume Grass (Hayland)	0.16
Legume (Pastureland)	0.15

Table 4-28. Annual Soil Loss in Subwatershed 06010208040.

4.2.E. 06010208050.

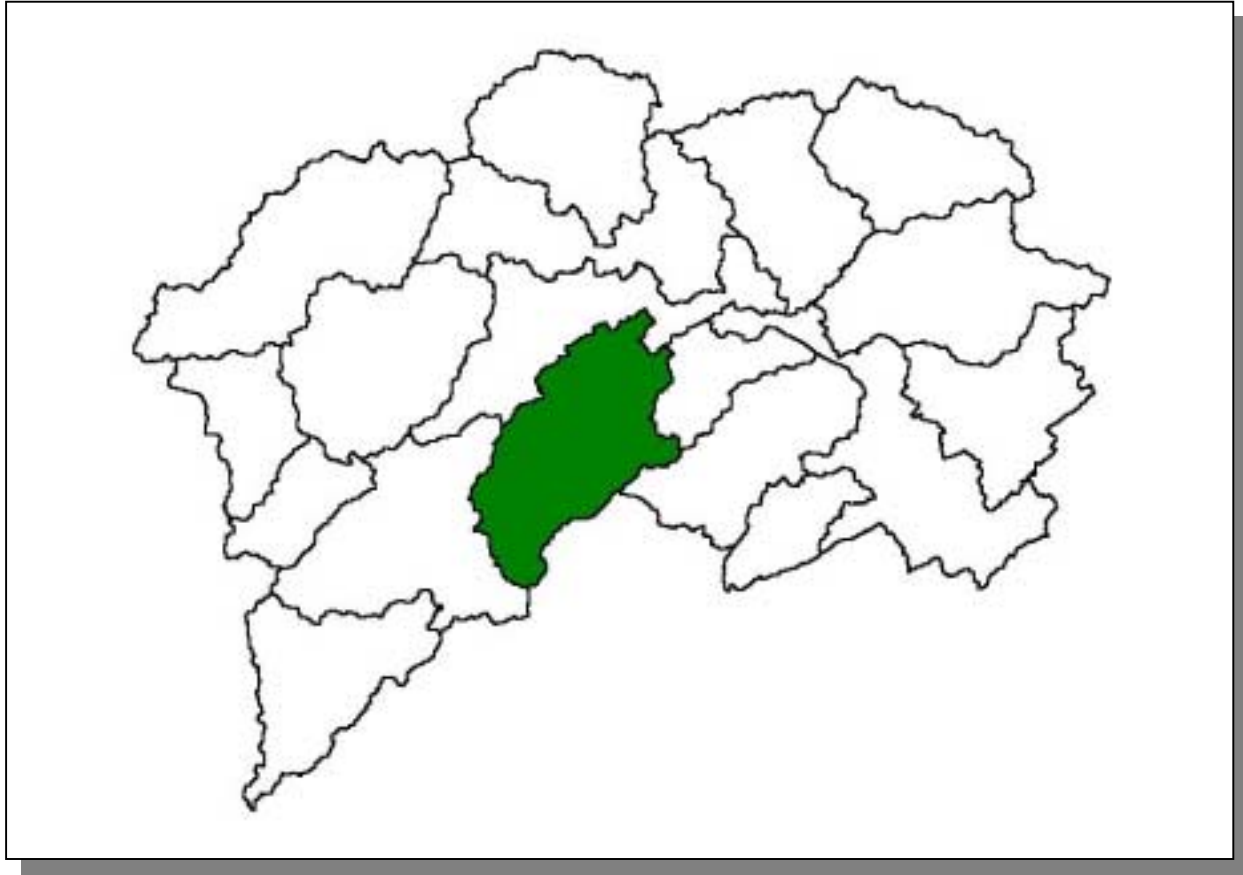


Figure 4-30. Location of Subwatershed 06010208050. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.E.i. General Description.

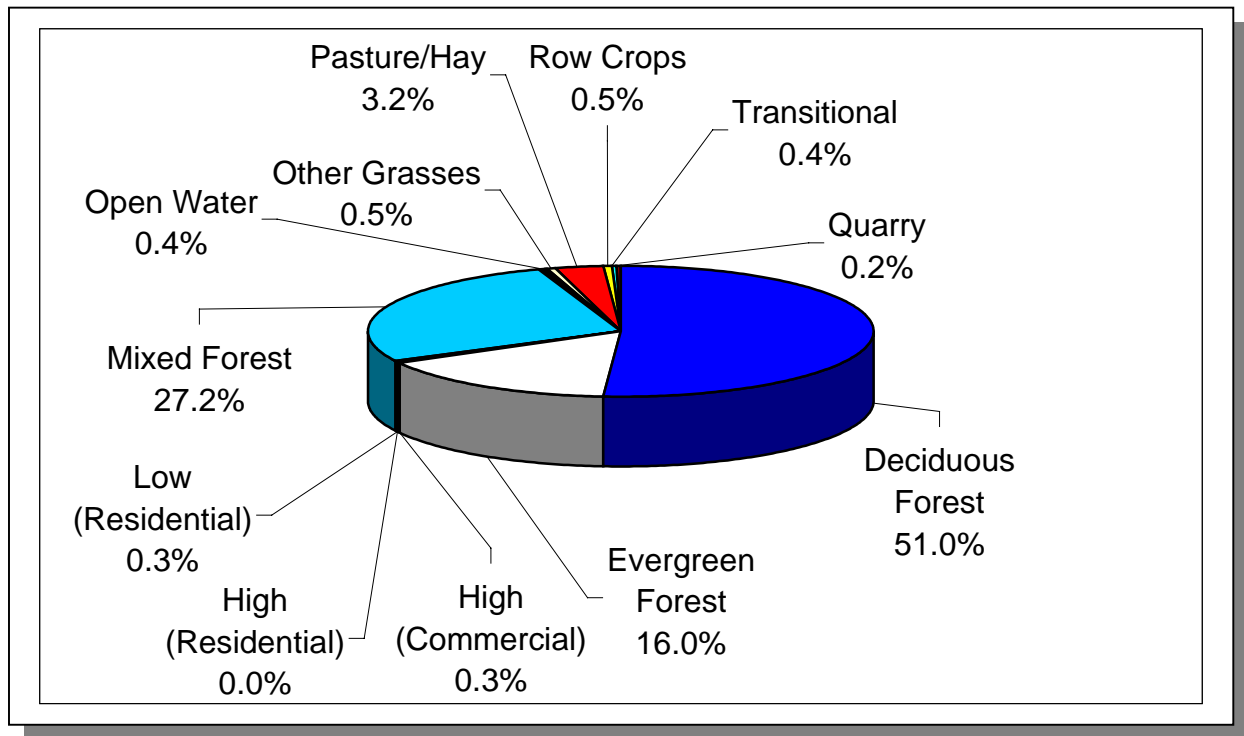


Figure 4-31. Land Use Distribution in Subwatershed 06010208050. More information is provided in Emory-Appendix IV.

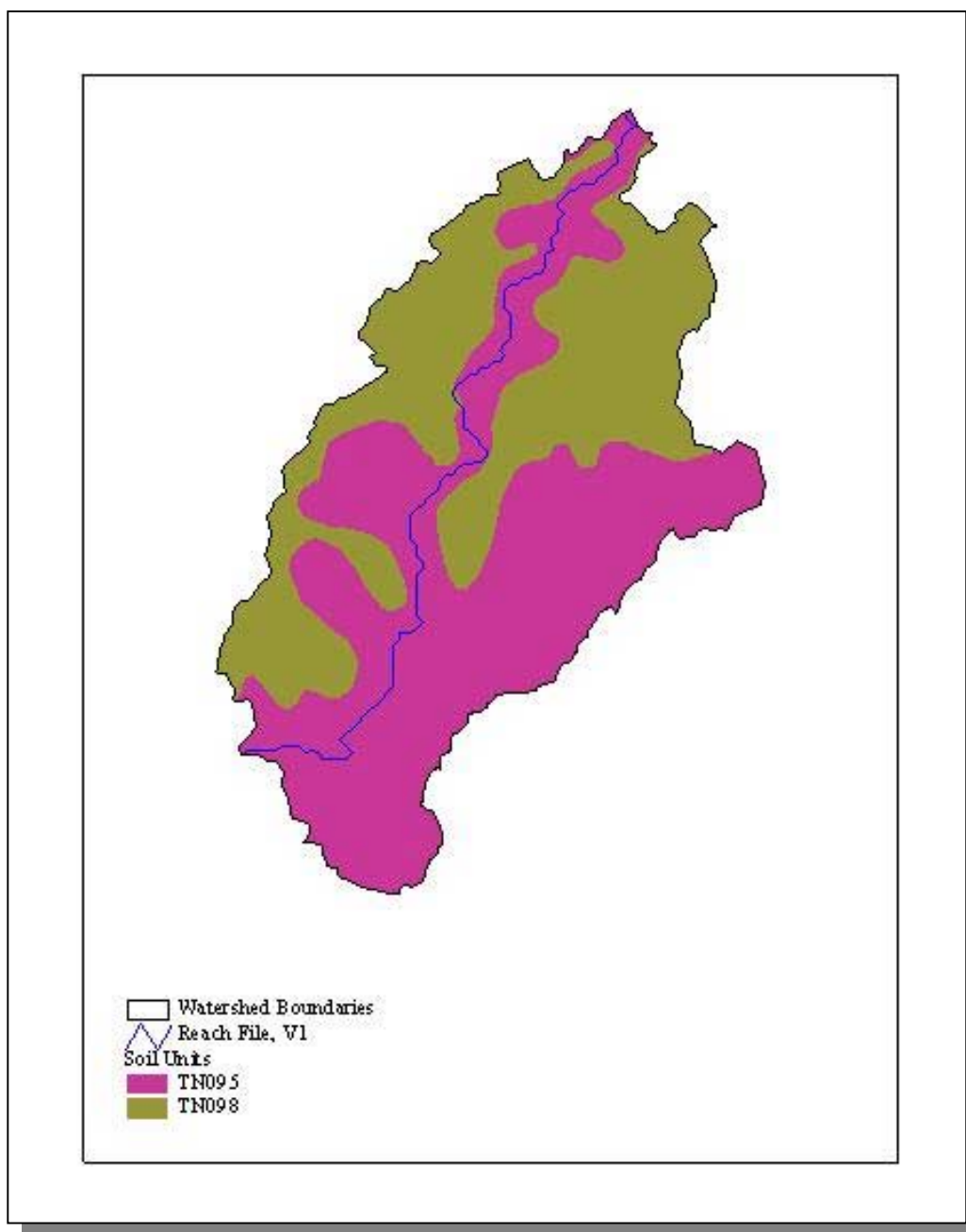


Figure 4-32. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208050.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATE SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32

Table 4-29. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208050. More information is provided in Emory-Appendix IV.

	County Population			Estimated Population in Watershed		% Change
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	8.84	3,072	3,823	24.4
Morgan	17,300	18,521	0.79	136	145	6.6
Totals	52,036	61,738		3,208	3,968	23.7

Table 4-30. Population Estimates in Subwatershed 06010208050.

				Number of Housing Units		
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Crab Orchard	Cumberland	876	420	71	328	21

Table 4-31. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208050.



Figure 4-33. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208050. More information is provided in Emory-Appendix IV.

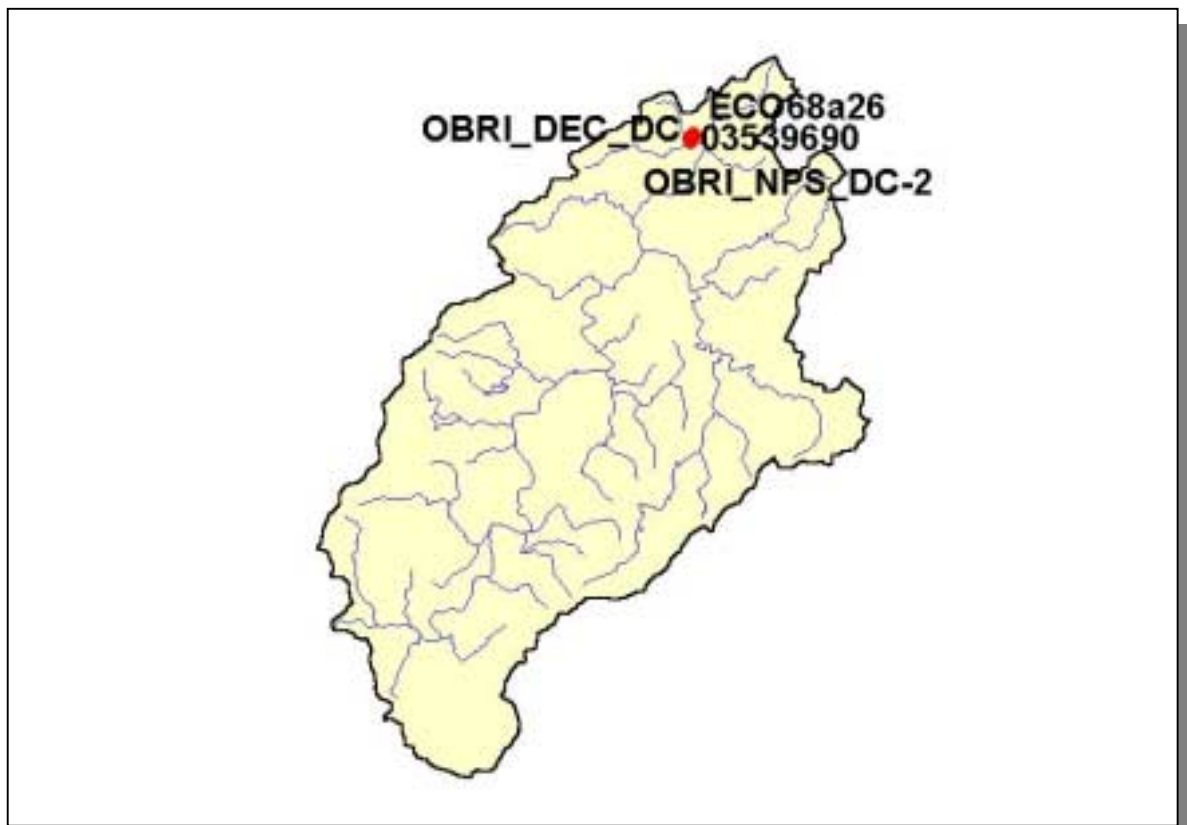


Figure 4-34. Location of STORET Monitoring Sites in Subwatershed 06010208050. More information is provided in Emory-Appendix IV.

4.2.E.ii. Point Source Contributions.



Figure 4-35. Location of Active Mining Sites in Subwatershed 06010208150. More information, including the names of facilities, is provided in Emory-Appendix IV.

4.2.E.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
281	686	68	<5	1,034	177	14

Table 4-32. Summary of Livestock Count Estimates in Subwatershed 06010208050.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Morgan	287.8	276.2	3.5	10.9
Total	608.1	596.5	9.4	33.4

Table 4-33. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010208050.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.40
Grass, Forbs, Legumes (Mixed Pasture)	0.25
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.22
Non Agricultural Land Use	0.00
Corn (Row Crops)	3.98
Grass (Hayland)	2.91
Legume Grass (Hayland)	0.16
Forest Land (Grazed)	0.00
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crops	14.05
Legume (Pastureland)	0.15

Table 4-34. Annual Estimated Soil Loss in Subwatershed 06010208050.

4.2.F. 06010208060



Figure 4-36. Location of Subwatershed 06010208060. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.F.i. General Description.

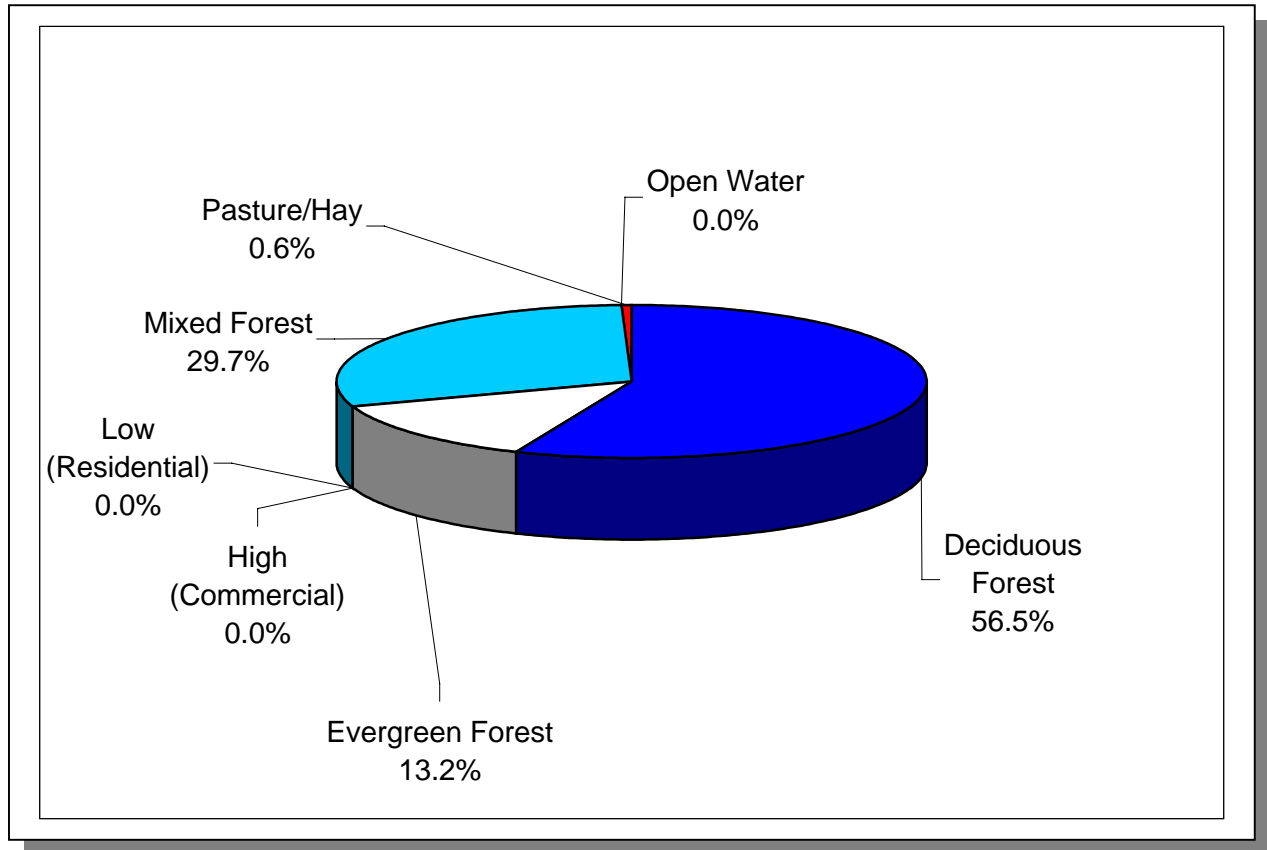


Figure 4-37. Land Use Distribution in Subwatershed 06010208060. More information is provided in Emory-Appendix IV.

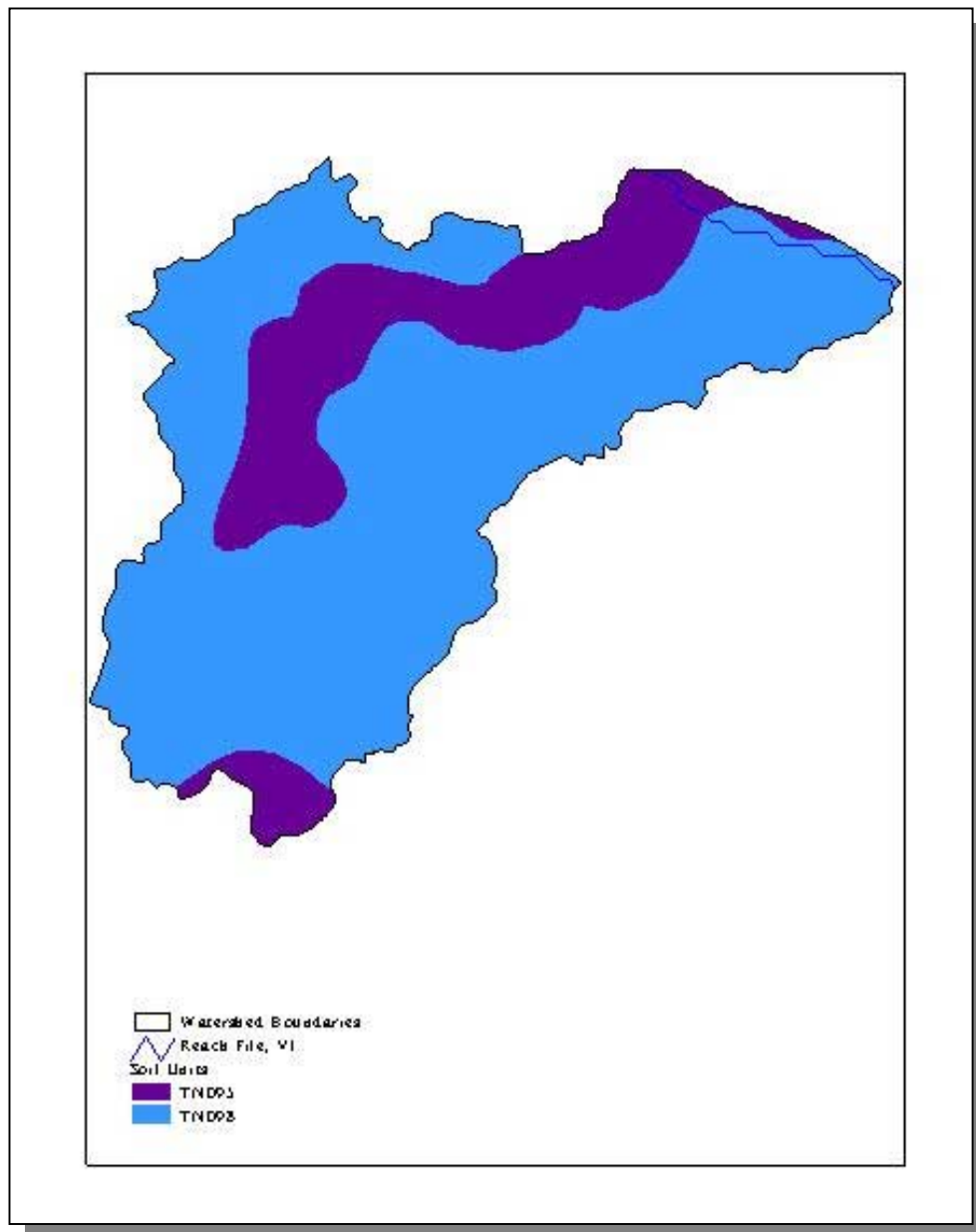


Figure 4-38. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208060.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATE SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32

Table 4-35. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208060. More information is provided in Emory-Appendix IV.

	TOTAL COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	0.54	189	235	24.3
Morgan	17,300	18,521	3.5	605	648	7.1
Totals	52,036	61,738		794	883	11.2

Table 4-36. Population Estimates in Subwatershed 06010208060.



Figure 4-39. Location of STORET Monitoring Sites in Subwatershed 06010208060. More information is provided in Emory-Appendix IV.

4.2.F.ii. Point Source Contributions.

No Contributions.

4.2.F.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)				
Beef Cow	Cattle	Milk Cow	Chickens Sold	Hogs
27	52	<5	7,954	<5

Table 4-37. Summary of Livestock Count Estimates in Subwatershed 06010208060.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	Inventory		Removal Rate	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Morgan	287.8	276.2	3.5	10.9
Total	608.1	596.5	9.4	33.4

Table 4-38. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208060.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.42
Grass, Forbs, Legumes (Mixed Pasture)	0.14
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.07
Non Agricultural Land Use	0.00
Corn (Row Crops)	6.60
Grass (Hayland)	1.16
Legume Grass (Hayland)	0.20
Forest Land (Grazed)	0.00
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crops	14.05
Legume (Pastureland)	0.15

Table 4-39. Annual Estimated Total Soil Loss in Subwatershed 06010208060.

4.2.G. 06010208070.

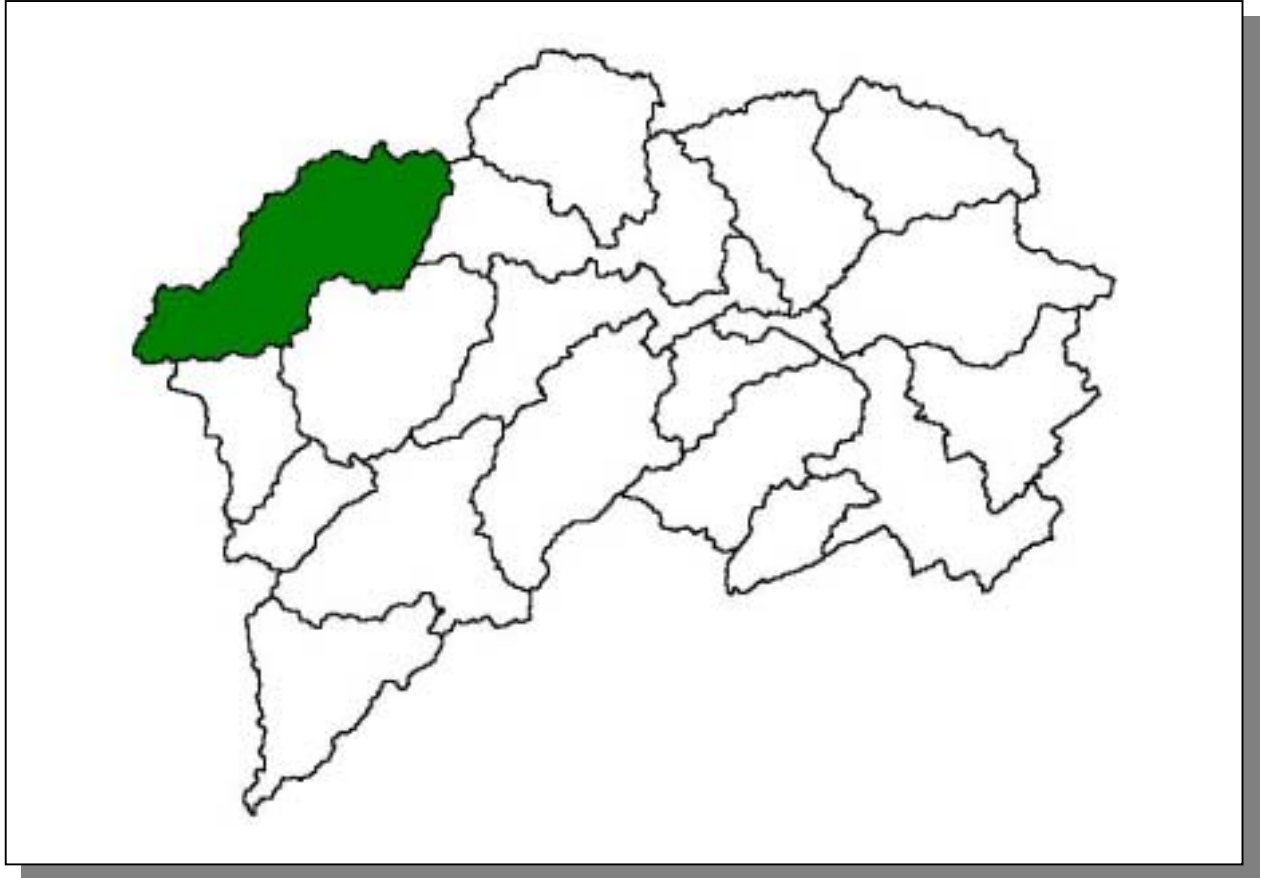


Figure 4-40. Location of Subwatershed 06010208070. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.G.i. General Description.

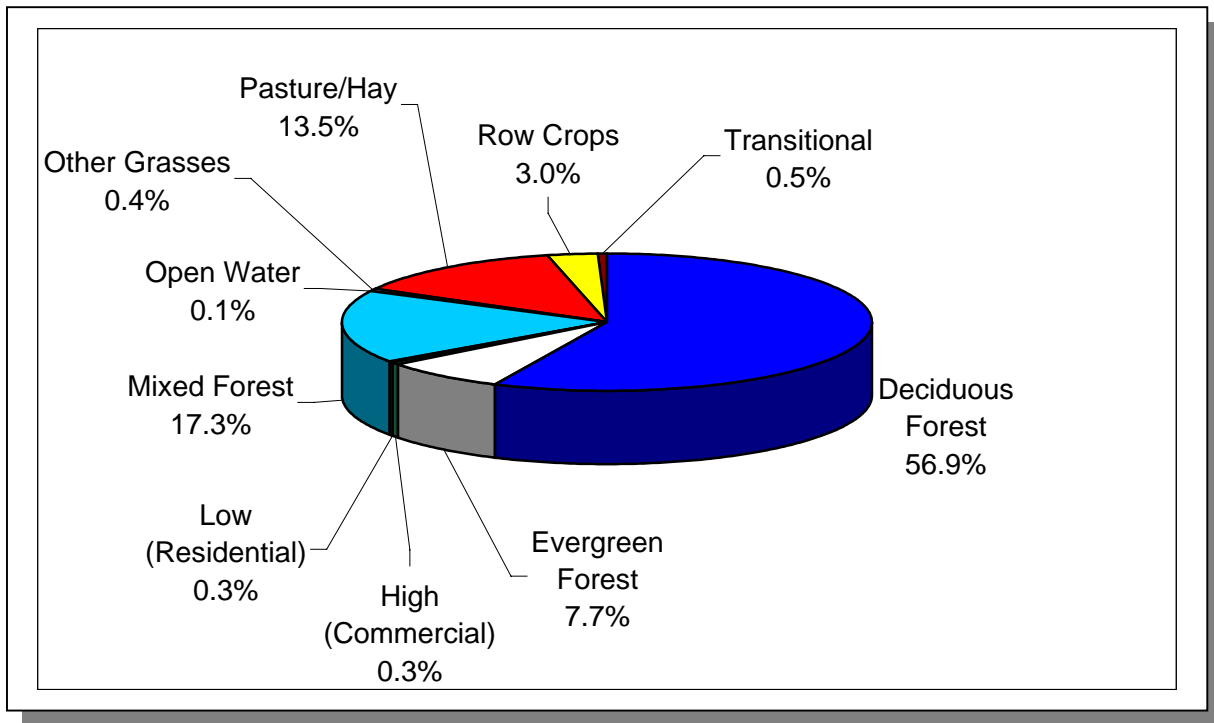


Figure 4-41. Land Use Distribution in Subwatershed 06010208070. More information is provided in Emory-Appendix IV.

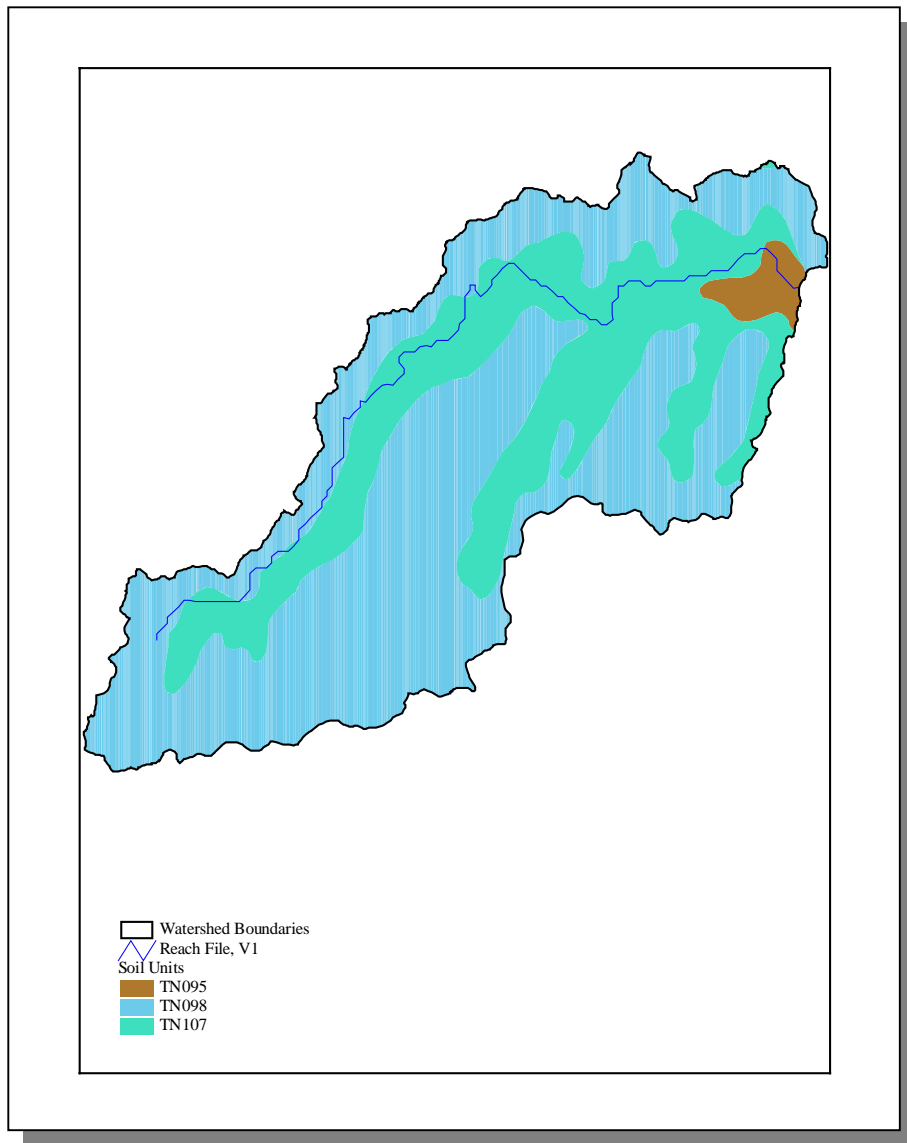


Figure 4-42. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208070.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28

Table 4-40. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208070. More information is provided in Emory-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	8.53	2,964	3,688	24.4
Fentress	14,669	15,920	2.78	408	442	8.3
Putnam	51,373	58,326	0	2	3	50.0
Totals	100,778	117,463		3,374	4,133	22.5

Table 4-41. Population Estimates in Subwatershed 06010208070.

4.2.G.ii. Point Source Contributions.

No Contributions.

4.2.G.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
2,052	4,711	304	7	925,618	749	60

Table 4-42. Summary of Livestock Count Estimates in Subwatershed 06010208070. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Fentress	244.1	244.1	3.6	14.3
Putnam	152.5	152.3	3.6	16.4
Total	716.9	716.7	13.1	53.2

Table 4-43. Forest Acreage and Average Removal Rates (1987-1994) in Subwatershed 06010208070.

CROP	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	6.13
Soybeans (Row Crops)	6.21
Other Vegetable and Truck Crops	14.41
Legume Grass (Hayland)	0.24
Grass (Pastureland)	0.46
Grass, Forbs, Legumes (Mixed Pasture)	0.26
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.26
Wheat (Close Grown Cropland)	43.40
Tobacco (Row Crops)	12.38
Grass (Hayland)	3.05
Legume (Hayland)	0.23
Legume (Pastureland)	0.15

Table 4-44. Annual Estimated Total Soil Loss in Subwatershed 06010208070.

4.2.H. 06010208080.

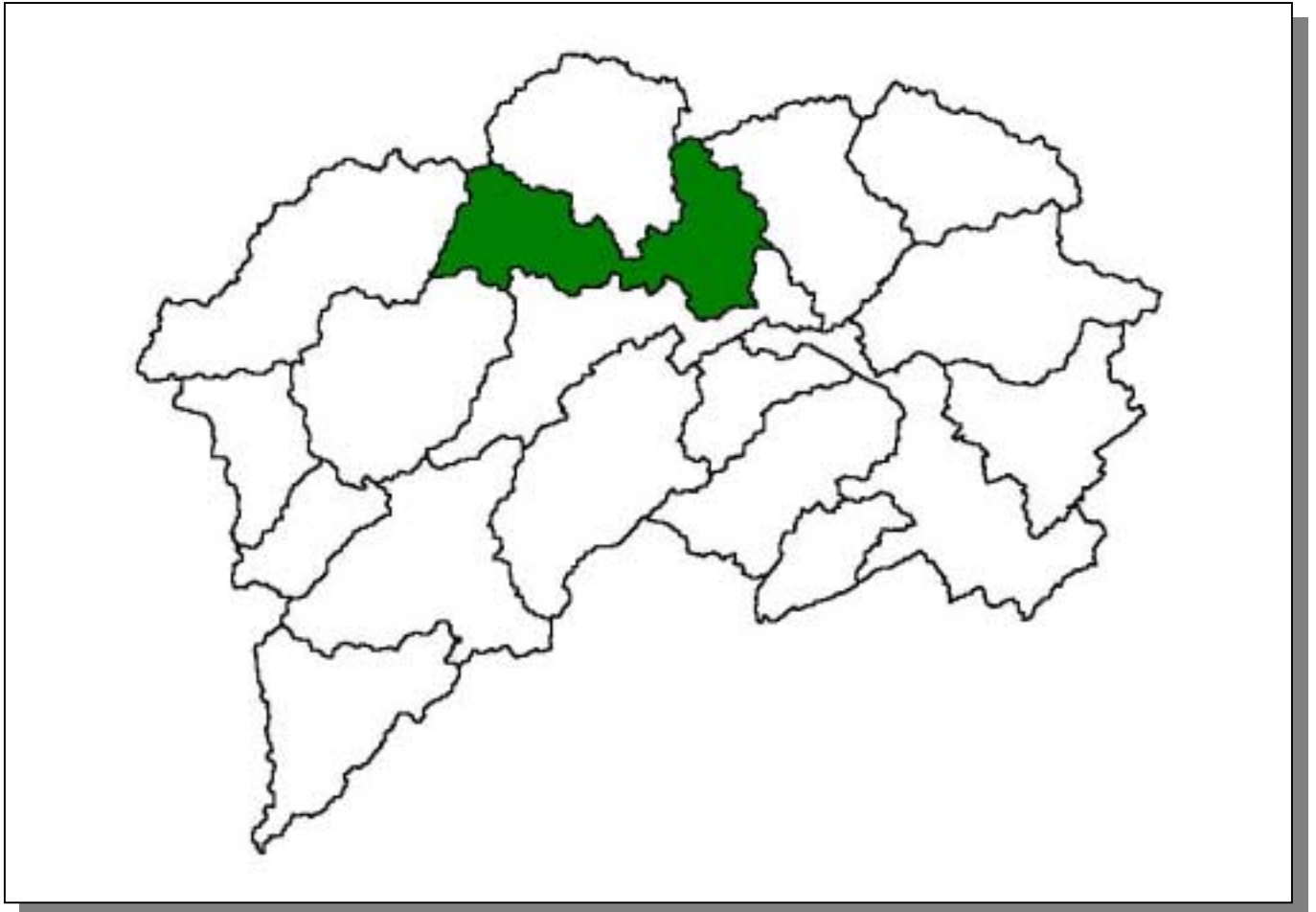


Figure 4-43. Location of Subwatershed 06010208080. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.H.i. General Description.

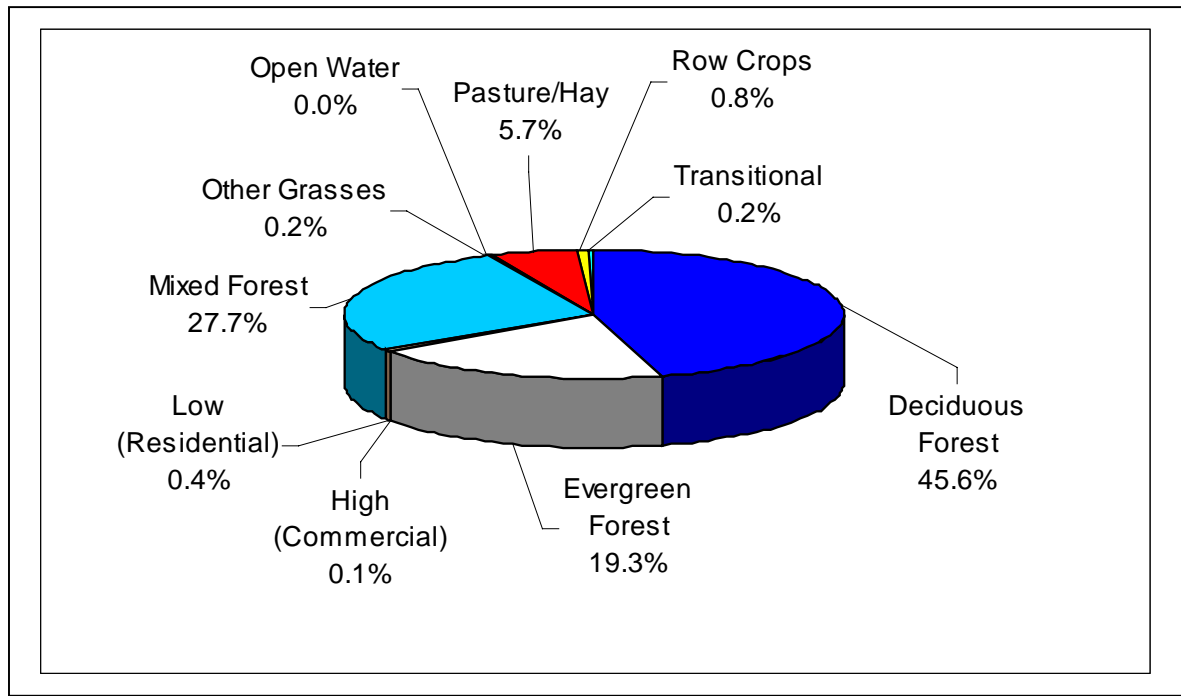


Figure 4-44. Land Use Distribution in Subwatershed 06010208080. More information is provided in Emory-Appendix IV.

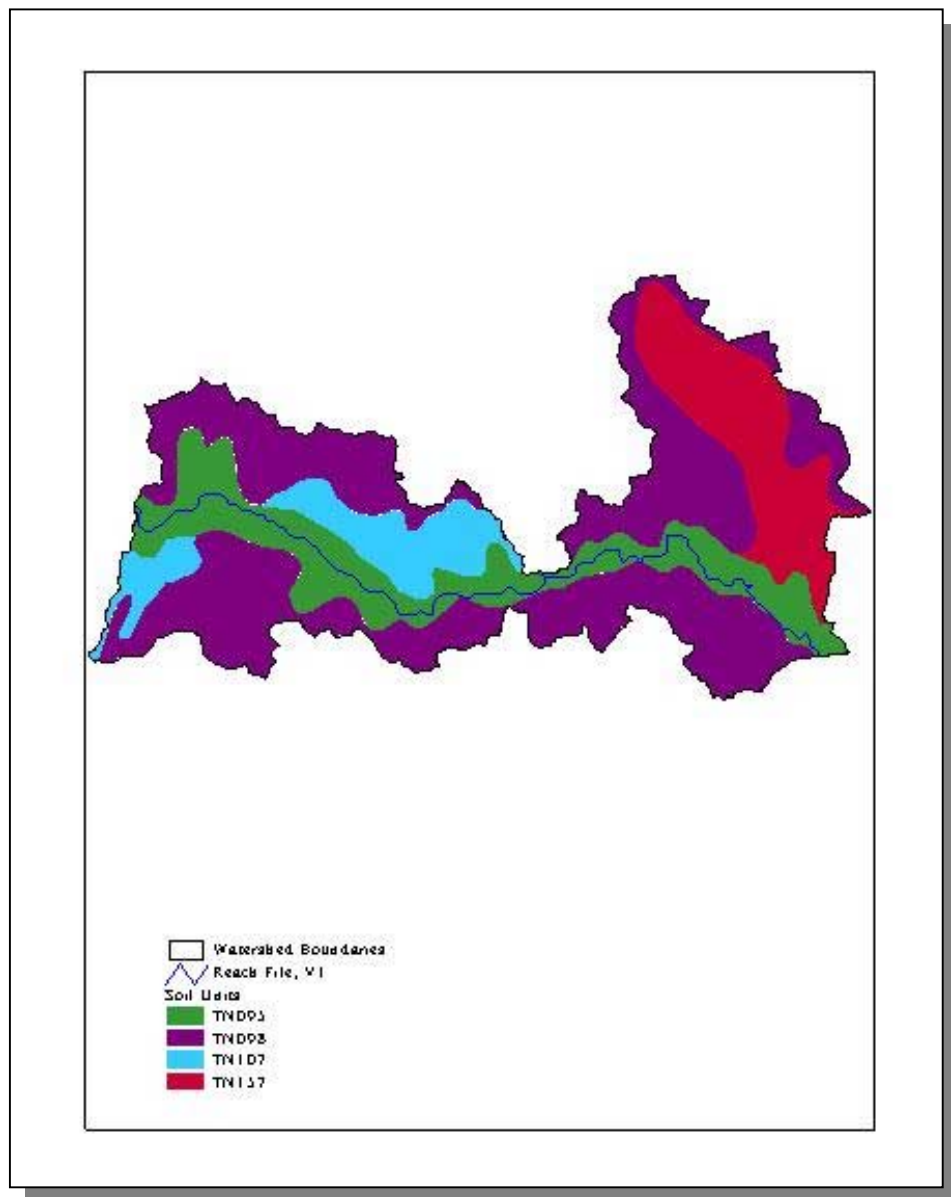


Figure 4-45. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208080.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28
TN157	0.00	B	2.38	4.62	Loam	0.28

Table 4-45. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208080. More information is provided in Emory-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Cumberland	34,736	43,217	1.81	628	781	24.4
Fentress	14,669	15,920	0.71	104	113	8.7
Morgan	17,300	18,521	8.05	1,393	1,491	7.0
Totals	66,705	77,658		2,125	2,385	12.2

Table 4-46. Population Estimates in Subwatershed 06010208080.

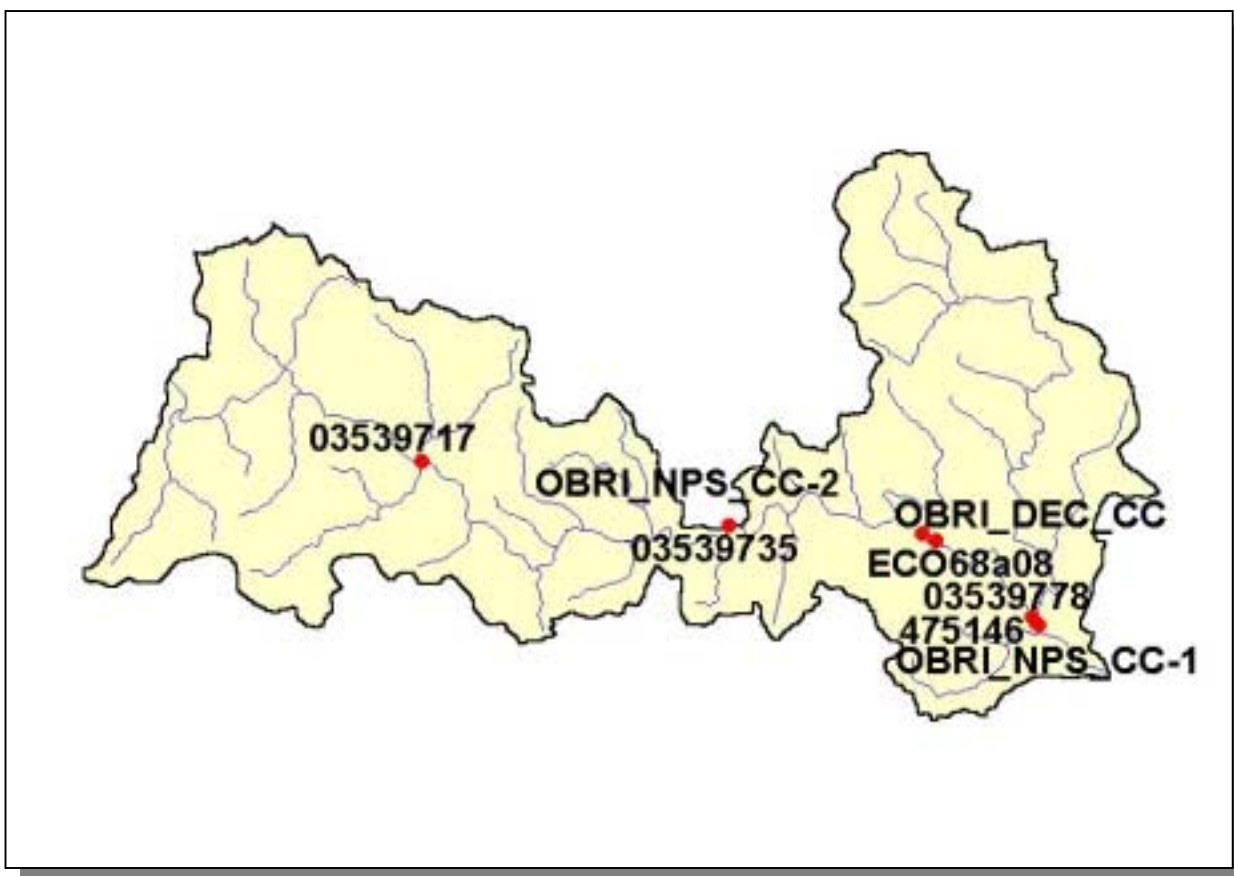


Figure 4-46. Location of STORET Monitoring Sites in Subwatershed 06010208080. More information is provided in Emory-Appendix IV.

4.2.H.ii. Point Source Contributions.

No Contribution.

4.2.H.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
862	1,731	50	<5	482,743	55	8

Table 4-47. Summary of Livestock Count Estimates in Subwatershed 06010208080.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Fentress	244.1	244.1	3.6	14.3
Morgan	287.8	276.2	3.5	10.9
Total	852.2	840.6	13.0	47.7

Table 4-48. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208080.

CROPS	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	6.99
Soybeans (Row Crops)	6.20
Other Vegetable and Truck Crops	14.47
Legume Grass (Hayland)	0.22
Grass (Pastureland)	0.44
Grass, Forbs, Legumes (Mixed Pasture)	0.15
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.10
Wheat (Close Grown Cropland)	43.40
Grass (Hayland)	1.29
Legume (Pastureland)	0.15

Table 4-49. Annual Estimated Total Soil Loss in Subwatershed 06010208080.

4.2.l. 06010208090.

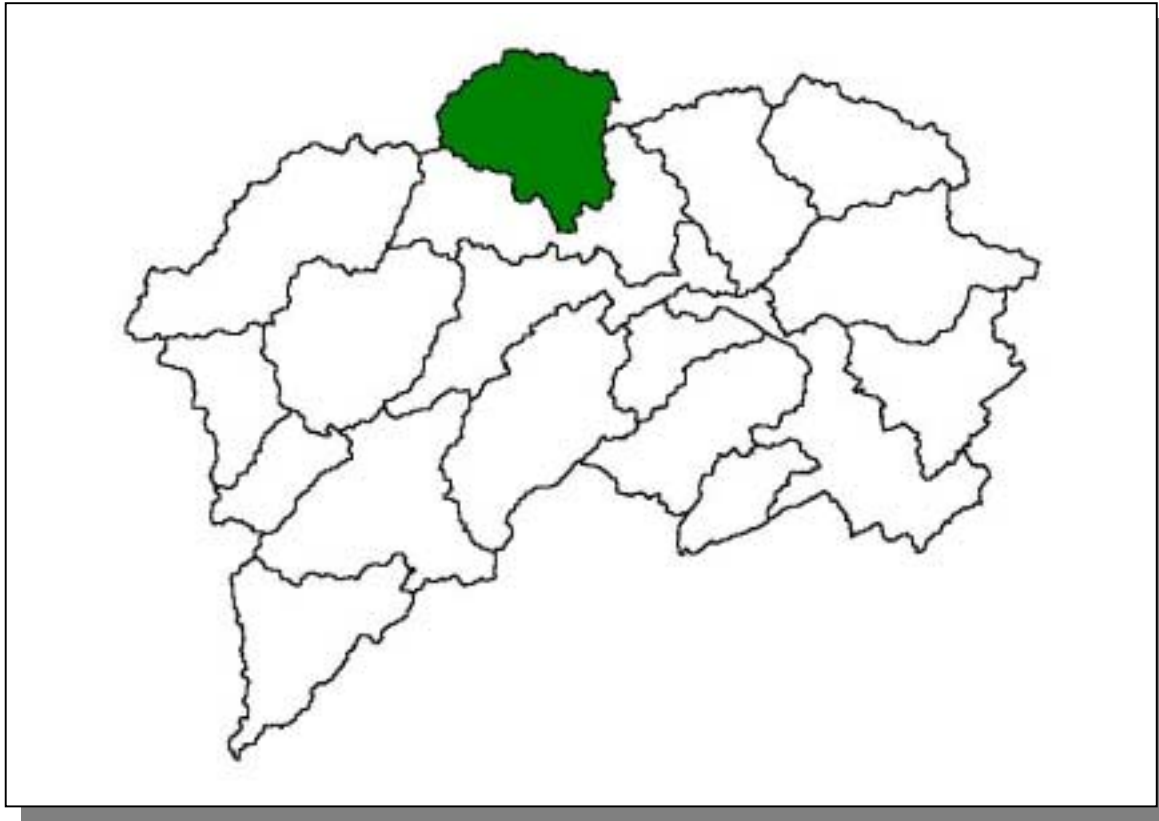


Figure 4-47. Location of Subwatershed 06010208090. All Emory HUC-14 subwatershed boundaries are shown for reference.

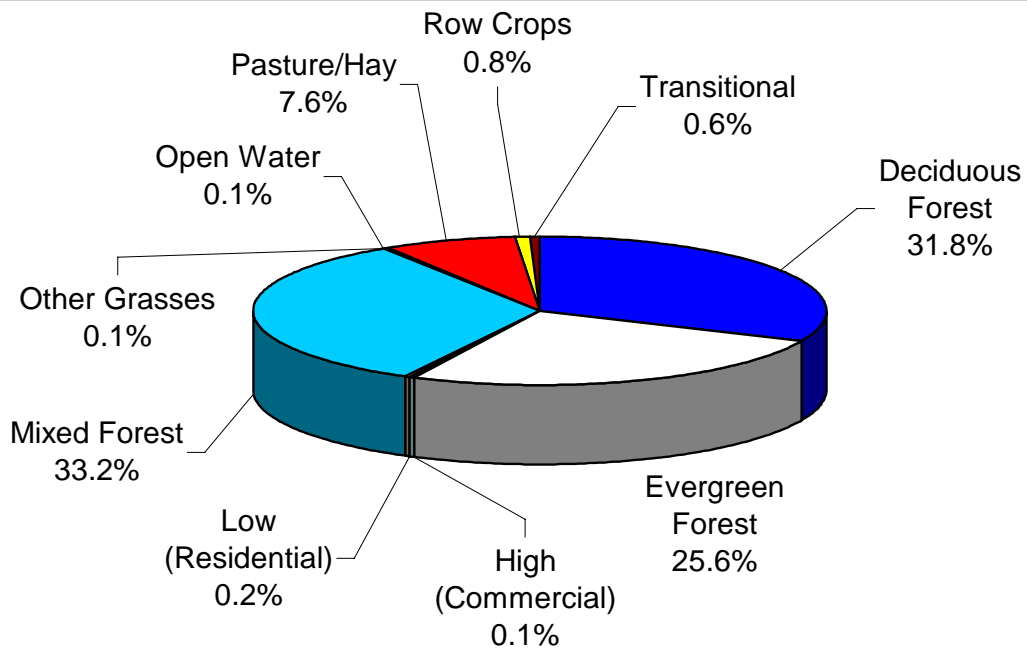


Figure 4-48. Land Use Distribution in Subwatershed 06010208090. More information is provided in Emory-Appendix IV.

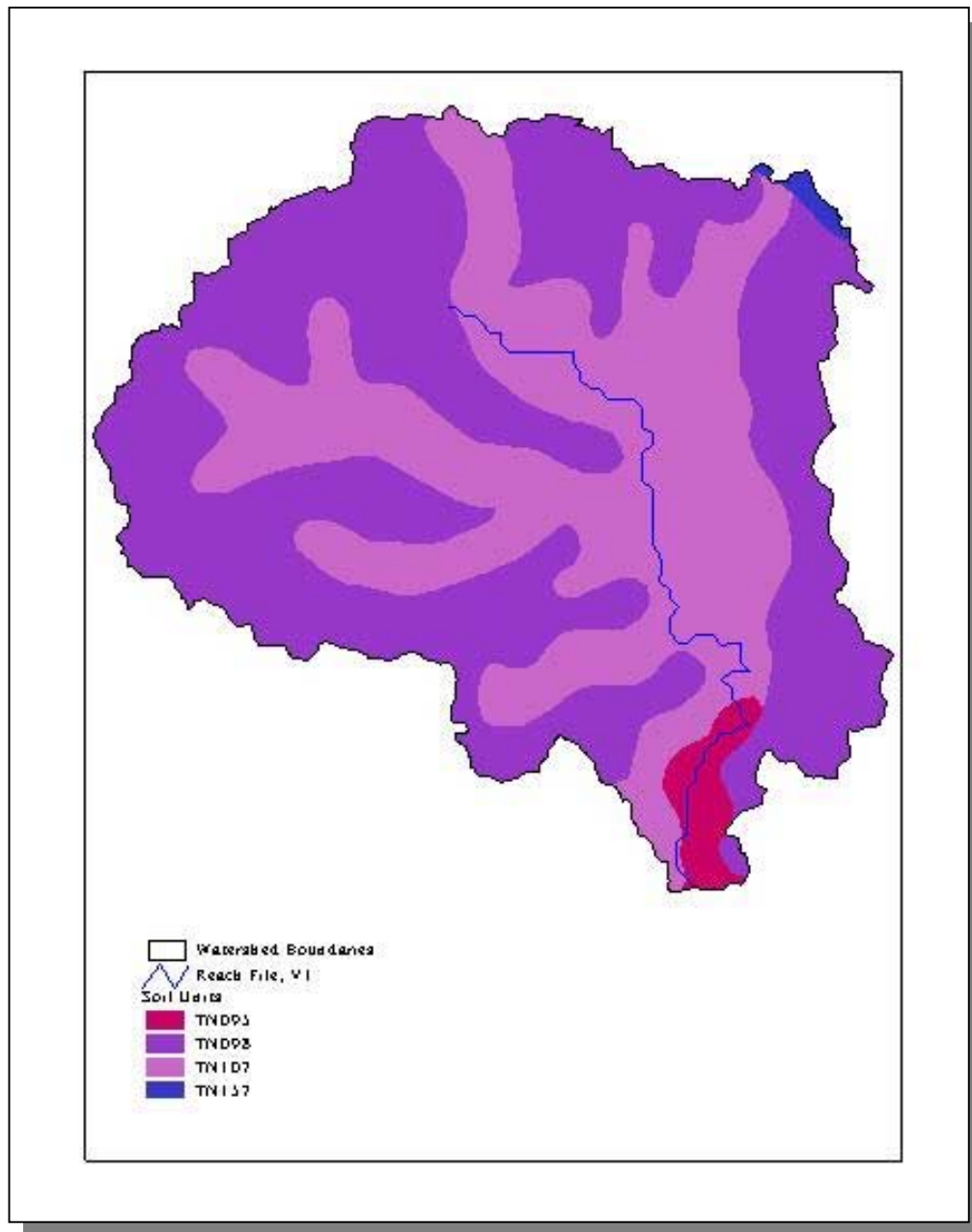


Figure 4-49. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208090.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN107	1.00	C	6.34	4.84	Loam	0.28
TN157	0.00	B	2.38	4.62	Loam	0.28

Table 4-50. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208090. More information is provided in Emory-Appendix IV

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Fentress	14,669	15,920	0.41	60	65	8.3
Morgan	17,300	18,521	9.47	1,637	1,753	7.1
Totals	31,969	34,441		1,697	1,818	7.1

Table 4-51. Population Estimates in Subwatershed 06010208090.



Figure 4-50. Location of STORET Monitoring Sites in Subwatershed 06010208090. More information is provided in Emory-Appendix IV.

4.2.I.ii. Point Source Contributions.

No Contributions.

4.2.I.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
1,008	2,003	54	<5	557,280	47	8

Table 4-52. Summary of Livestock Count Estimates in Subwatershed 06010208090.
According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Fentress	244.1	244.1	3.6	14.3
Morgan	287.8	276.2	3.5	10.9
Total	531.9	520.3	7.1	25.2

Table 4-53. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208090.

CROP	TONS/ACRE/YEAR
Non Agricultural Land Use	0.00
Corn (Row Crops)	7.53
Soybeans (Row Crops)	6.00
Other Vegetable and Truck Crops	15.94
Legume Grass (Hayland)	0.22
Grass (Pastureland)	0.44
Grass, Forbs, Legumes (Mixed Pasture)	0.12
Forest Land (Grazed)	0.00
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.05
Wheat (Close Grown Cropland)	43.40
Grass (Hayland)	0.77

Table 4-54. Annual Estimated Total Soil Loss in Subwatershed 06010208090.

4.2.J. 06010208100.

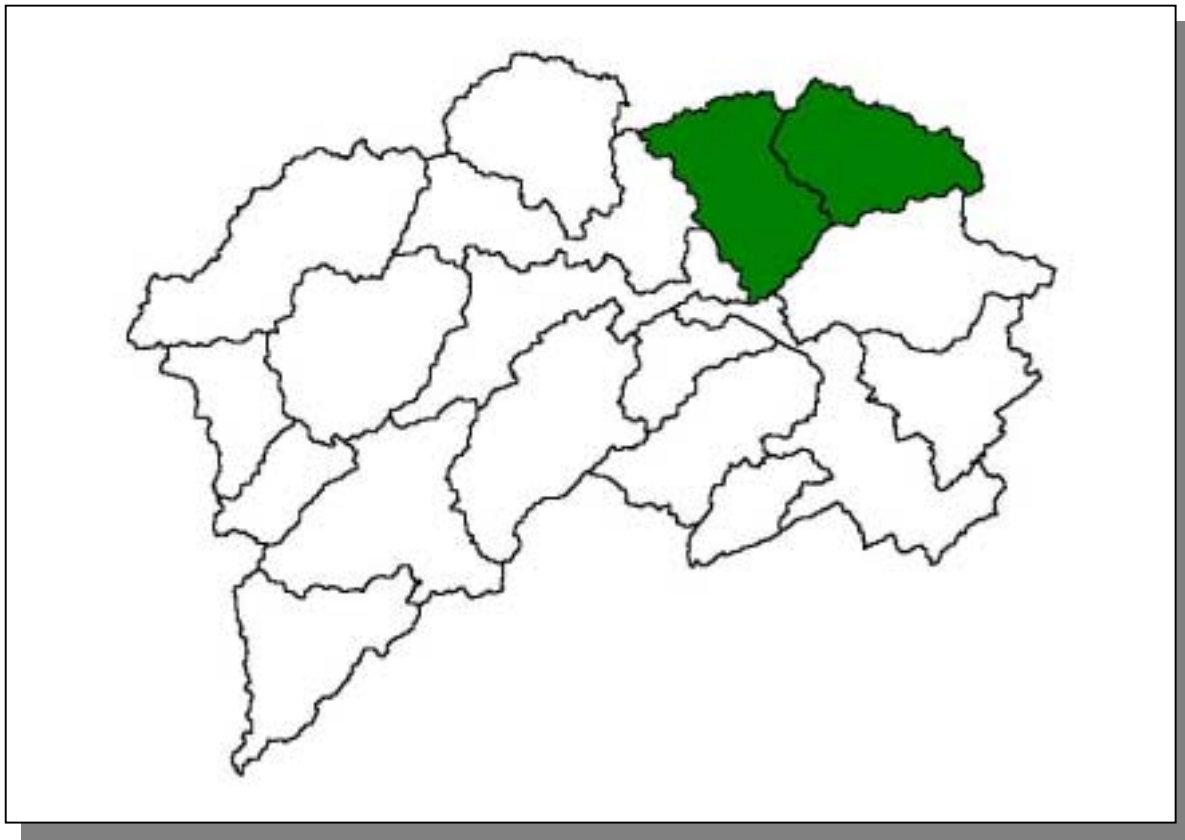


Figure 4-51. Location of Subwatershed 06010208100. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.J.i. General Description.

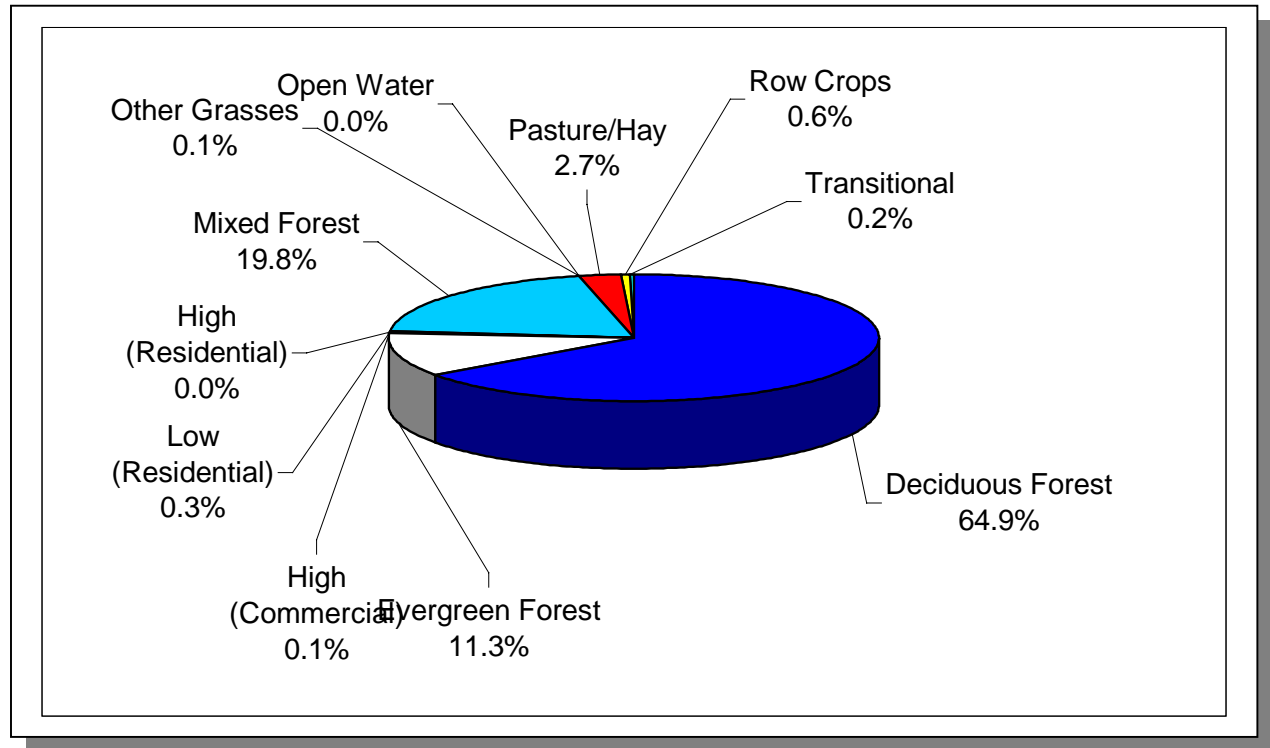


Figure 4-52. Land Use Distribution in Subwatershed 06010208100. More information is provided in Emory-Appendix IV.

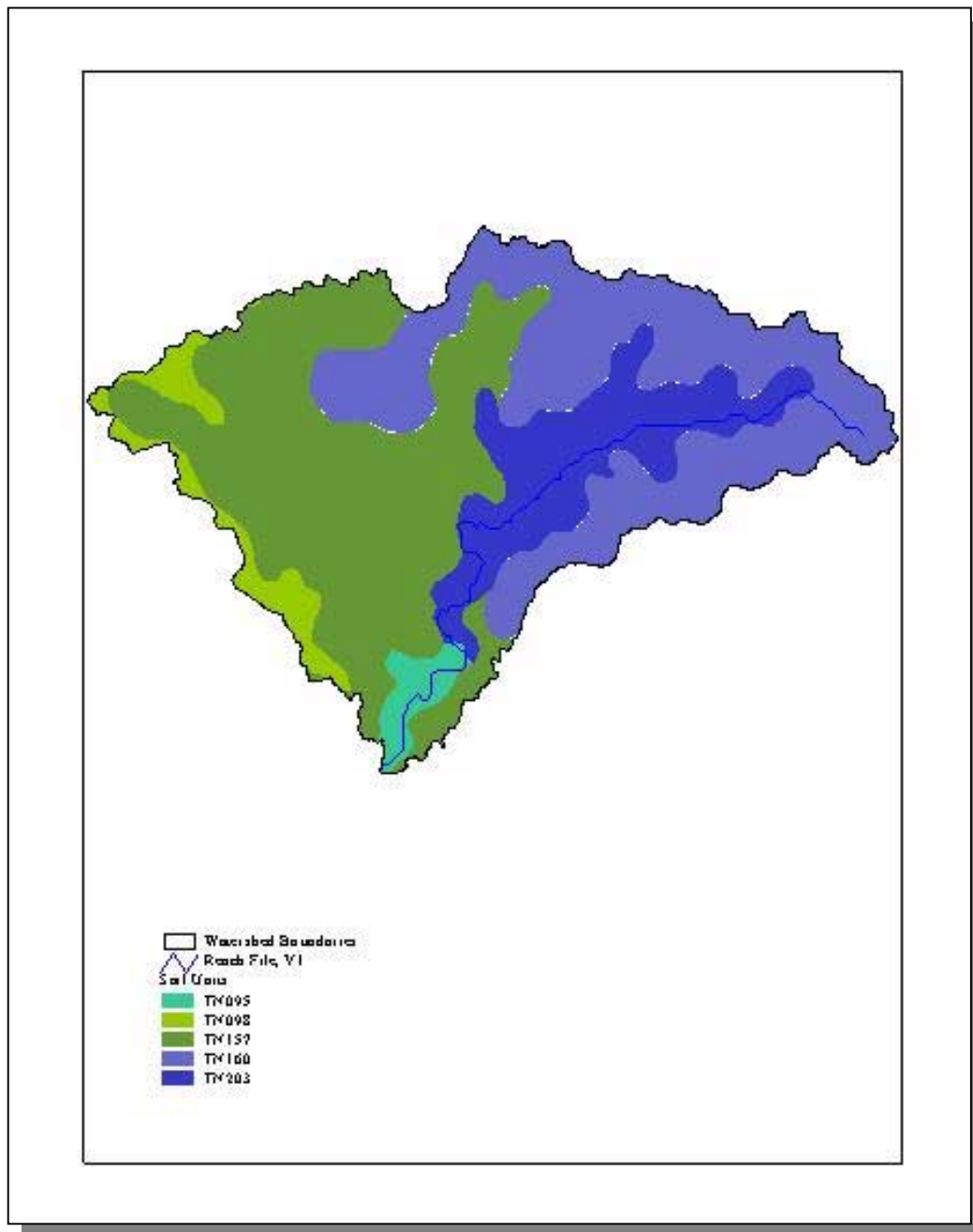


Figure 4-53. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208100.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN157	0.00	B	2.38	4.62	Loam	0.28
TN160	0.00	B	2.69	5.36	Loam	0.25
TN203	0.00	B	3.46	5.18	Loam	0.26

Table 4-55. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208100. More information is provided in Emory-Appendix IV

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Anderson	68,250	71,498	0.05	31	33	6.5
Morgan	17,300	18,521	17.75	3,071	3,287	7.0
Scott	18,358	19,816	0	0	0	0
Totals	103,908	109,835		3,102	3,320	7.0

Table 4-56. Population Estimates in Subwatershed 05130208100.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Wartburg	Morgan	932	375	326	49	0

Table 4-57. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 08010208100.

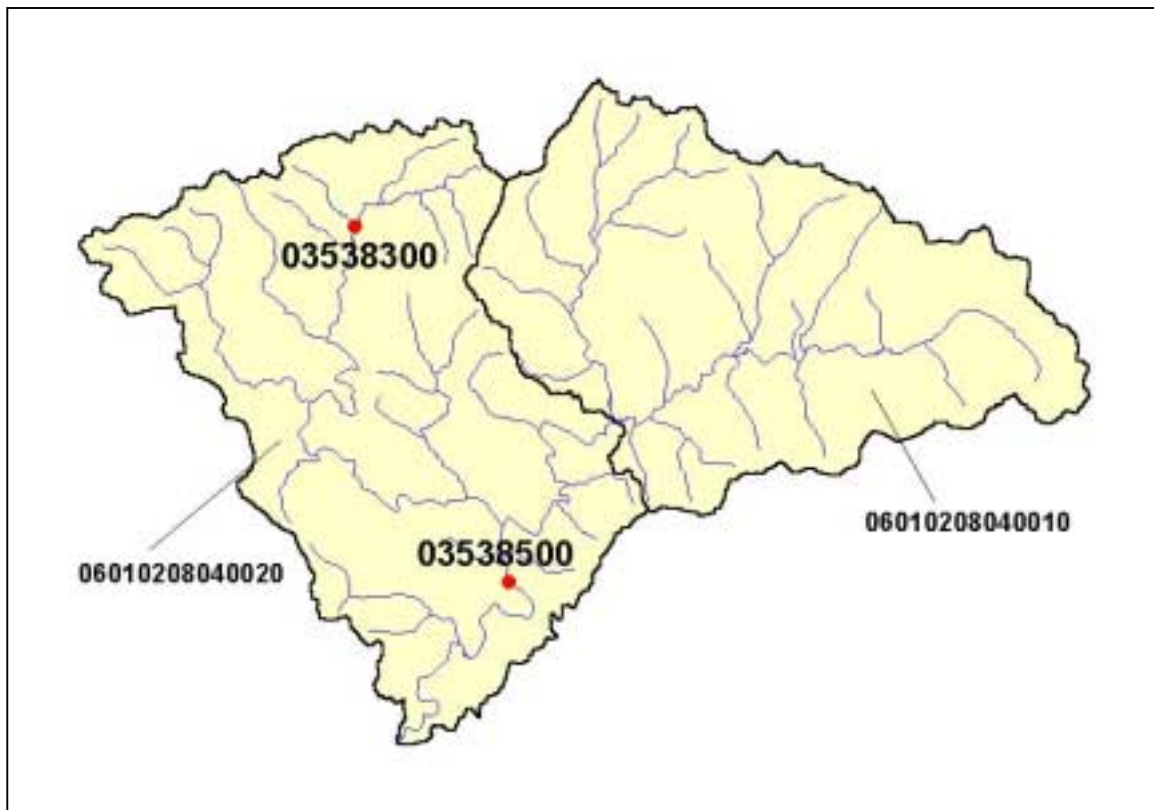


Figure 4-54. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208100. Subwatershed 06010208040010 and 06010208040020 boundaries are shown for reference. More information is provided in Emory-Appendix IV.

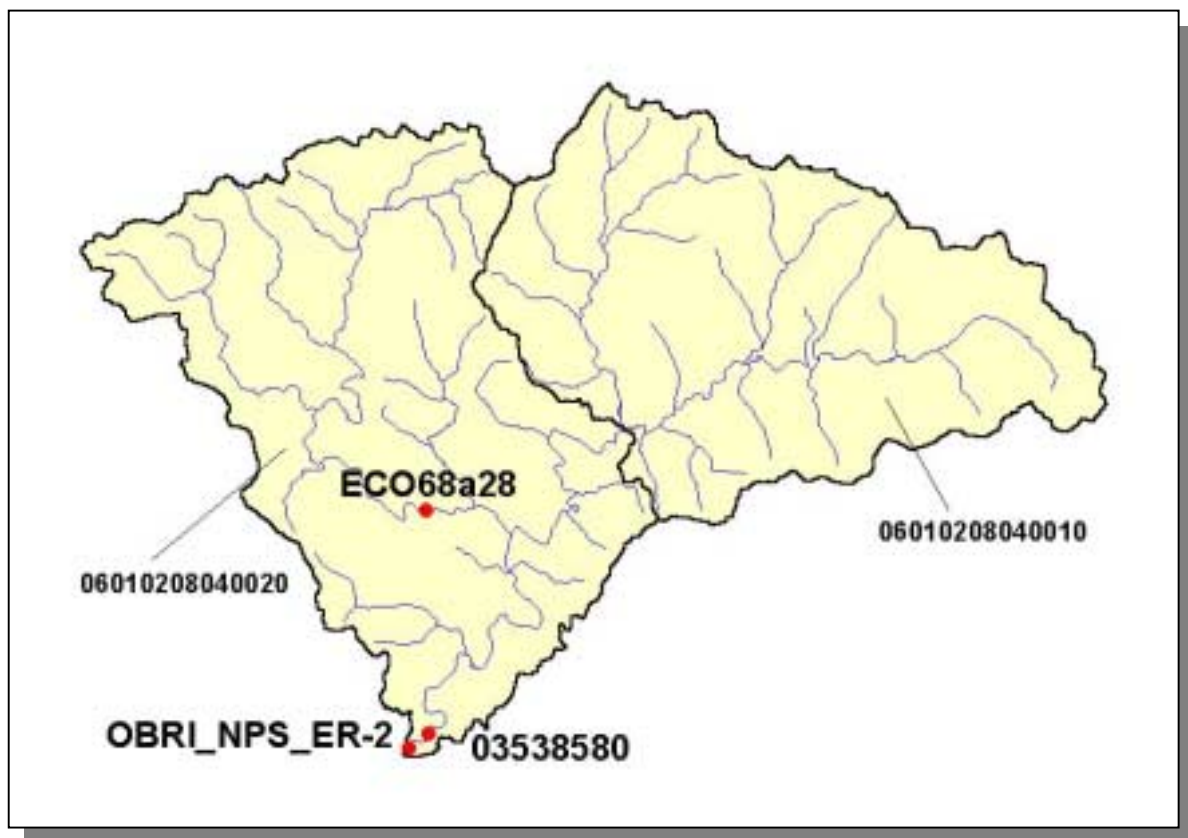


Figure 4-55. Location of STORET Monitoring Sites in Subwatershed 06010208100. Subwatershed 06010208040010 and 06010208040020 boundaries are shown for reference. More information is provided in Emory-Appendix IV.

4.2.J.ii. Point Source Contributions.

No contributions.

4.2.J.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
509	959	27	<5	162,119	9	<5

Table 4-58. Summary of Livestock Count Estimates in Subwatershed 06010208100. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Anderson	124.0	124.0	2.6	6.2
Morgan	287.8	276.2	3.5	10.9
Scott	300.3	300.3	5.5	21.4
Total	712.1	700.5	11.6	38.5

Table 4-59. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208100.

CROP	TONS/ACRE/YEAR
Grass (Pastureland)	0.43
Forest Land (Not Grazed)	0.00
Non Agricultural Land Use	0.00
Grass, Forbs, Legumes (Mixed Pasture)	0.11
Forest Land (Grazed)	0.00
Farmsteads and Ranch Headquarters	0.04
Corn (Row Crops)	7.18
Grass (Hayland)	0.77
Legume Grass (Hayland)	0.22
Tobacco (Row Crops)	1.62
Other Vegetable and Truck Crops	12.06
Legume (Hayland)	1.07
Other Land in Farms	0.23

Table 4-60. Annual Estimated Total Soil Loss in Subwatershed 06010208100.

4.2.K. 06010208110.

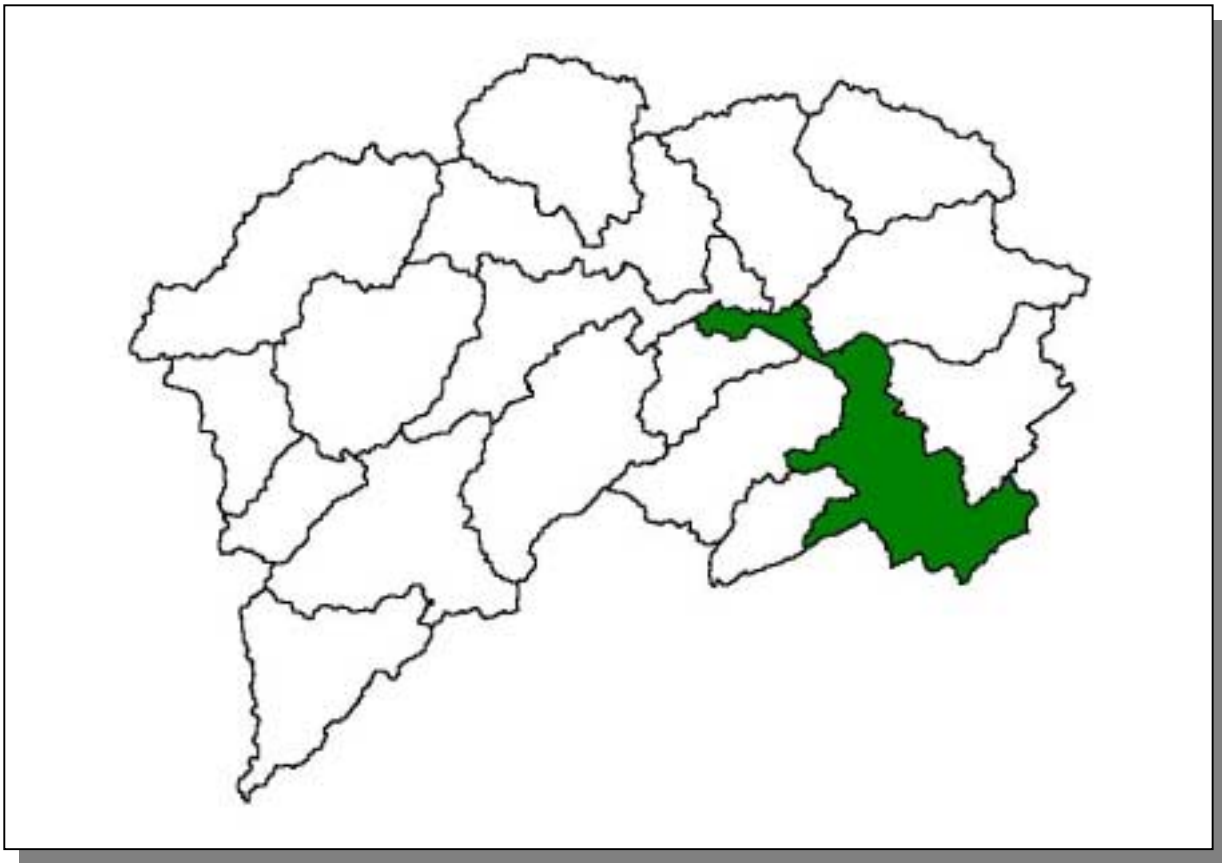


Figure 4-56. Location of Subwatershed 06010208110. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.K.i. General Description.

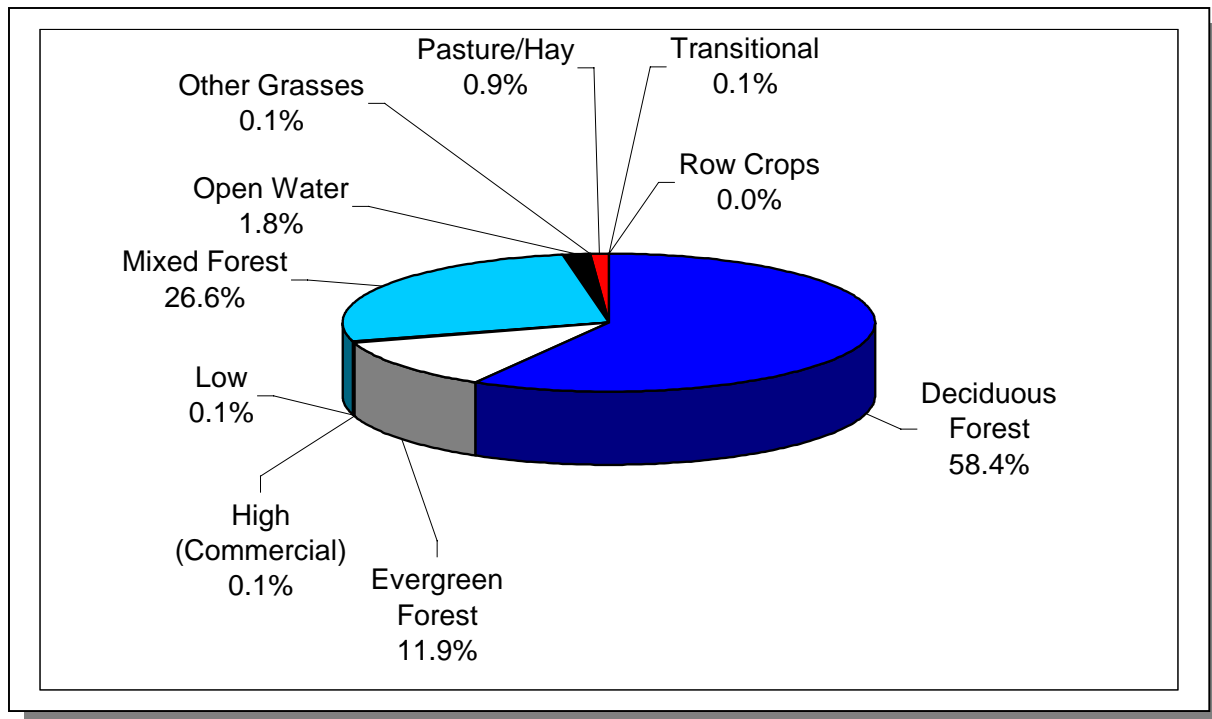


Figure 4-57. Land Use Distribution in Subwatershed 06010208110. More information is provided in Emory-Appendix IV.

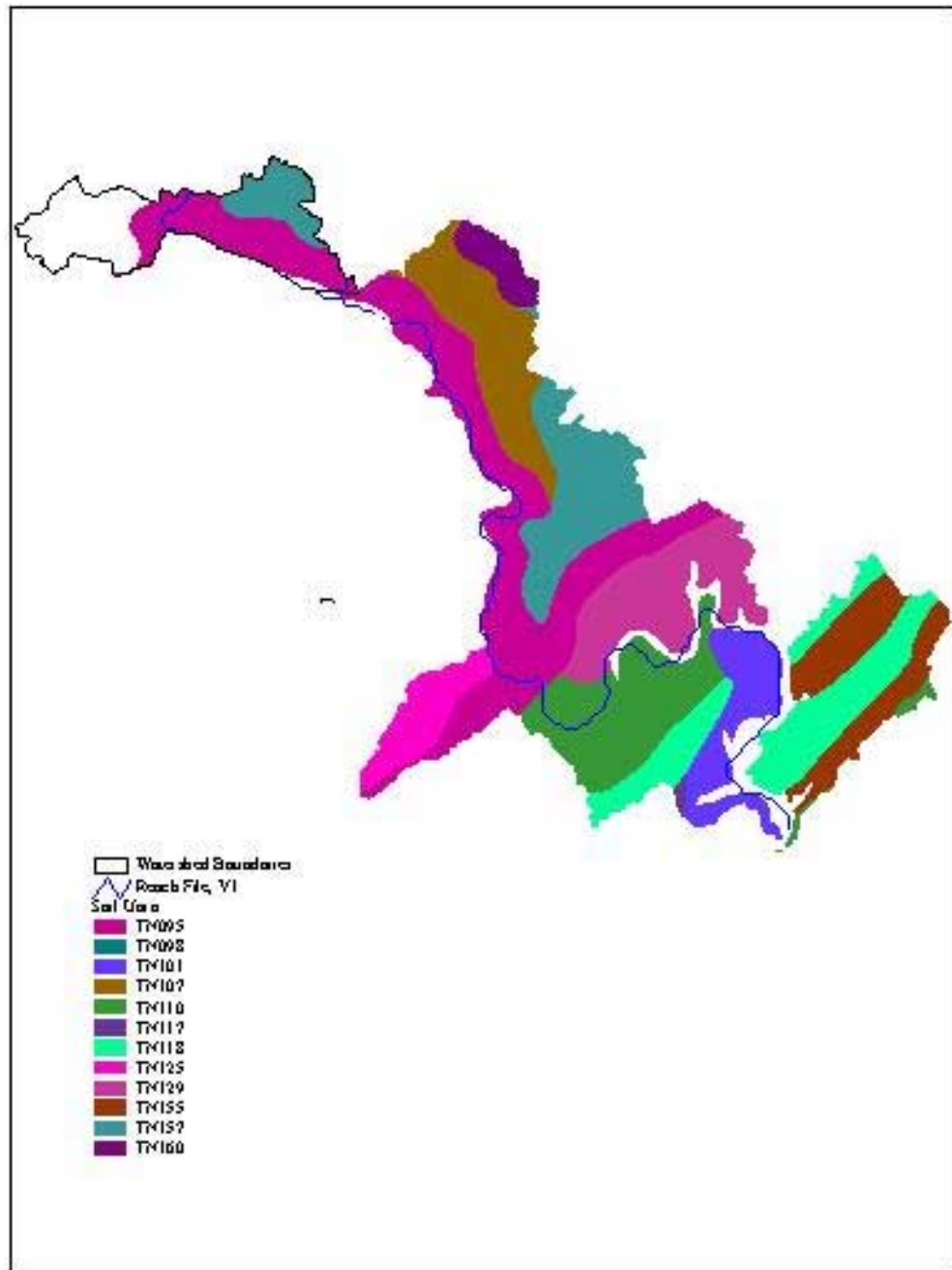


Figure 4-58. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208110.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN101	0.00	B	1.71	5.39	Loam	0.35
TN107	1.00	C	6.34	4.84	Loam	0.28
TN110	0.00	B	2.22	4.96	Loam	0.31
TN117	1.00	C	2.06	5.16	Loam	0.37
TN118	0.00	C	6.52	5.12	Loam	0.29
TN125	0.00	C	8.50	5.00	Sandy Loam	0.20
TN129	0.00	B	2.65	5.24	Loam	0.26
TN155	0.00	C	1.71	5.31	Loam	0.32
TN157	0.00	B	2.38	4.62	Loam	0.28
TN160	0.00	B	2.69	5.36	Loam	0.25

Table 4-61. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208110. More information is provided in Emory-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Morgan	17,300	18,521	6.00	1,039	1,112	7.0
Roane	47,227	49,885	8.35	3,943	4,165	5.6
Totals	64,527	68,406		4,982	5,277	5.9

Table 4-62. Population Estimates in Subwatershed 06010208110.

Populated Place	County	Population	NUMBER OF HOUSING UNITS			
			Total	Public Sewer	Septic Tank	Other
Harriman	Roane	7,119	3,234	2,776	445	13
Oakdale	Morgan	248	128	12	116	0
Total		7,367	3,362	2,788	561	13

Table 4-63. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208110.

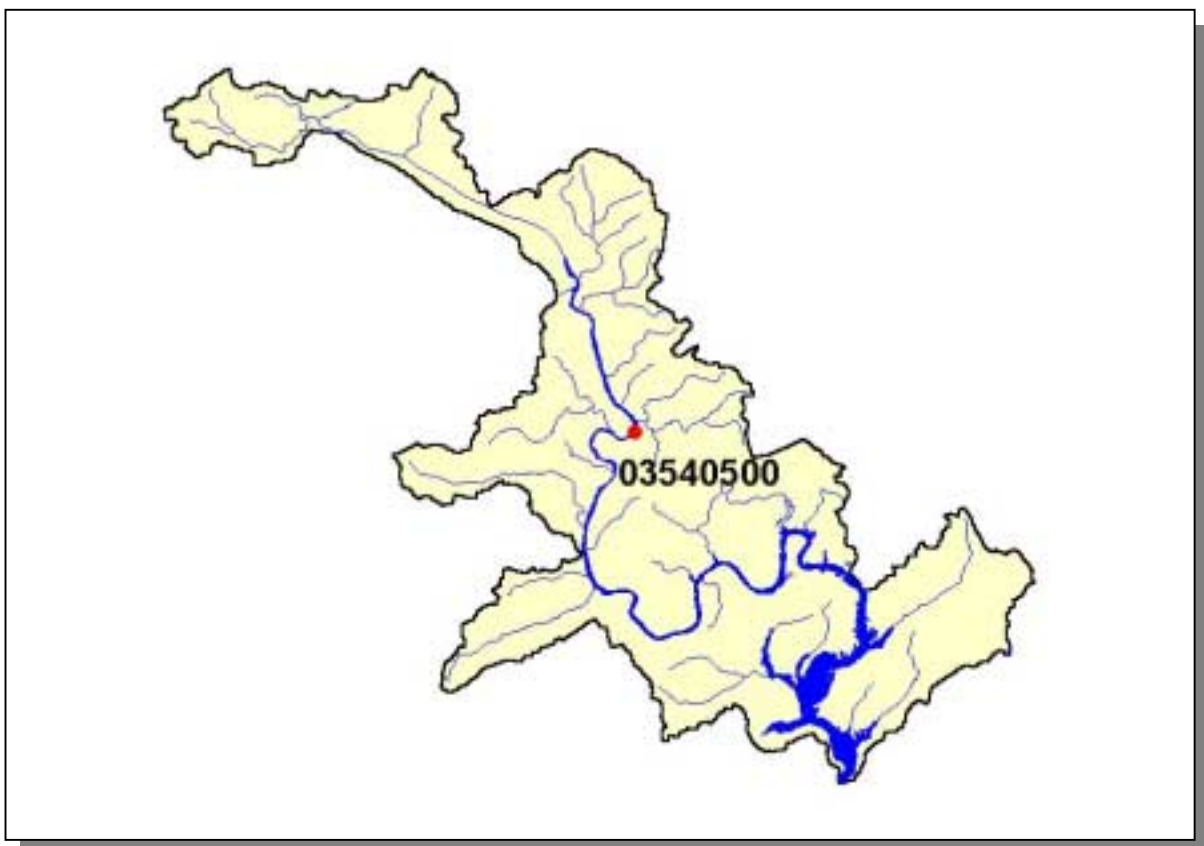


Figure 4-59. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208110. More information is provided in Emory-Appendix IV.

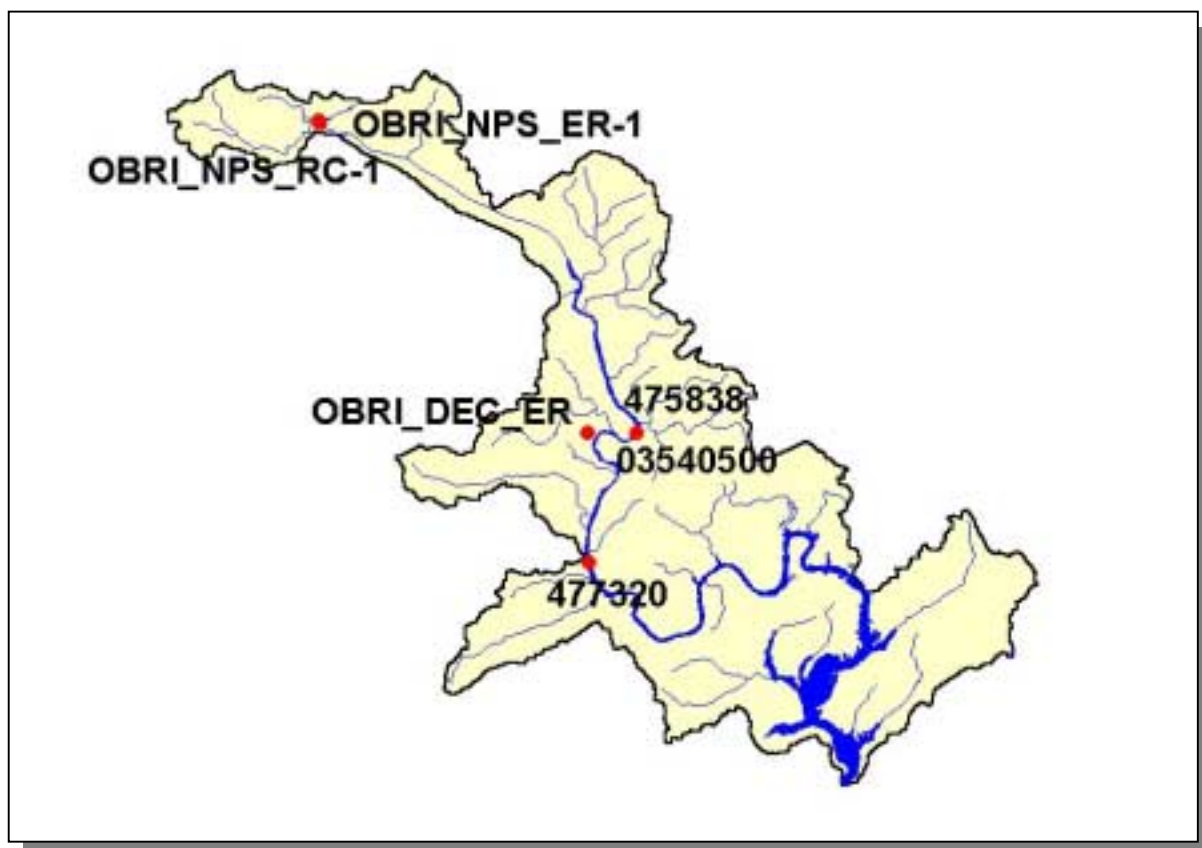


Figure 4-60. Location of STORET Monitoring Sites in Subwatershed 06010208110. More information is provided in Emory-Appendix IV.

4.2.K.ii. Point Source Contributions.



Figure 4-61. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208110. More information, including the names of facilities, is provided in Emory-Appendix IV.



Figure 4-62. Location of Active Mining Sites in Subwatershed 06010208110. More information, including the names of facilities, is provided in Emory-Appendix IV.

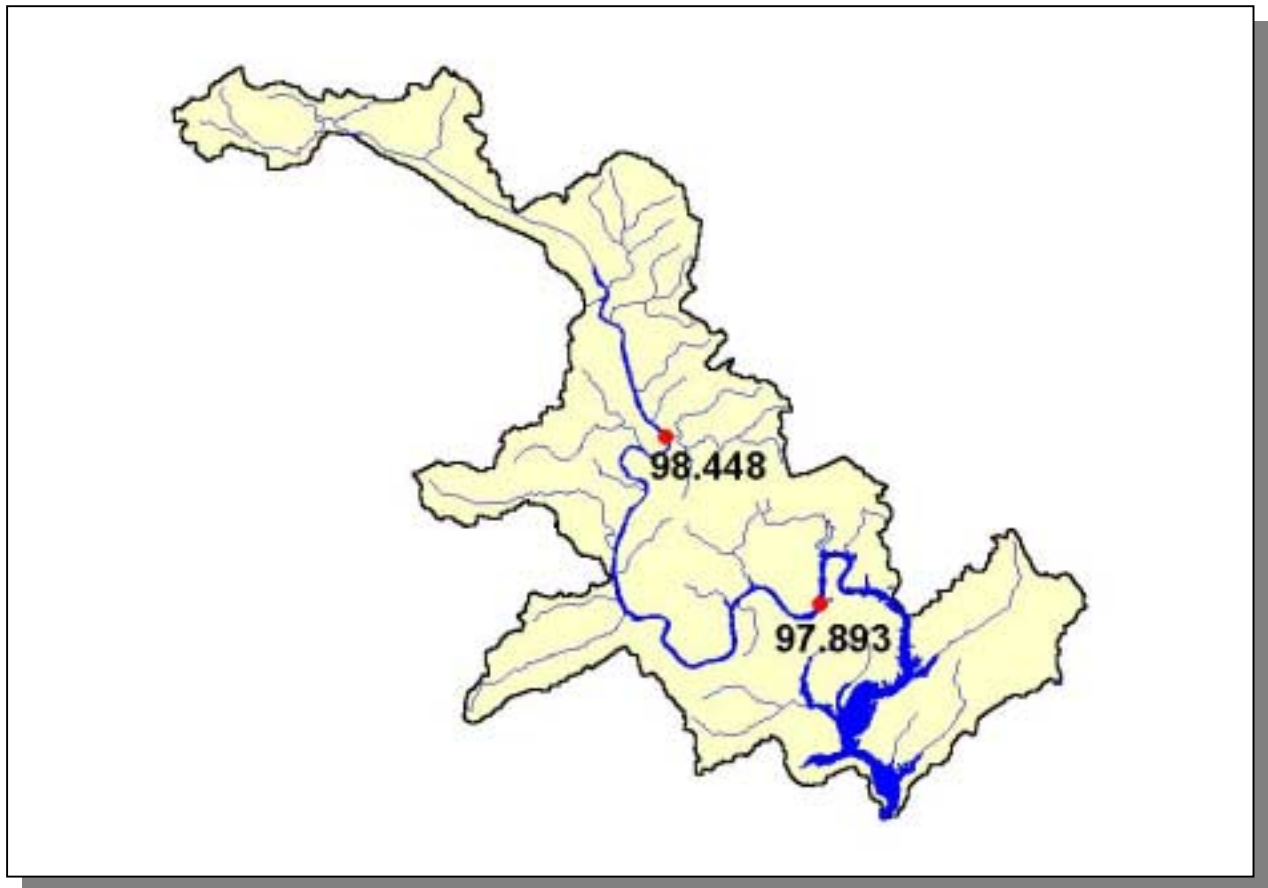


Figure 4-63. Location of ARAP Sites (Individual Permits) in Subwatershed 06010208110.
 More details may be found in Emory-Appendix IV.

4.2.K.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
834	1,599	57	<5	80,127	17	15

Table 4-64. Summary of Livestock Count Estimates in Subwatershed 06010208110.
 According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Morgan	287.8	276.2	3.5	10.9
Roane	153.1	153.1	1.7	5.1
Total	440.9	429.3	5.2	16.0

Table 4-65. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208110.

CROP	TONS/ACRE/YEAR
Grass (Pastureland)	1.44
Grass, Forbs, Legumes (Mixed Pasture)	0.30
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.84
Non Agricultural Land Use	0.00
Corn (Row Crops)	7.18
Grass (Hayland)	0.77
Legume Grass (Hayland)	0.24
Forest Land (Grazed)	0.00
Legume (Pastureland)	0.23

Table 4-66. Annual Estimated Total Soil Loss in Subwatershed 06010208110.

4.2.L. 06010208120.

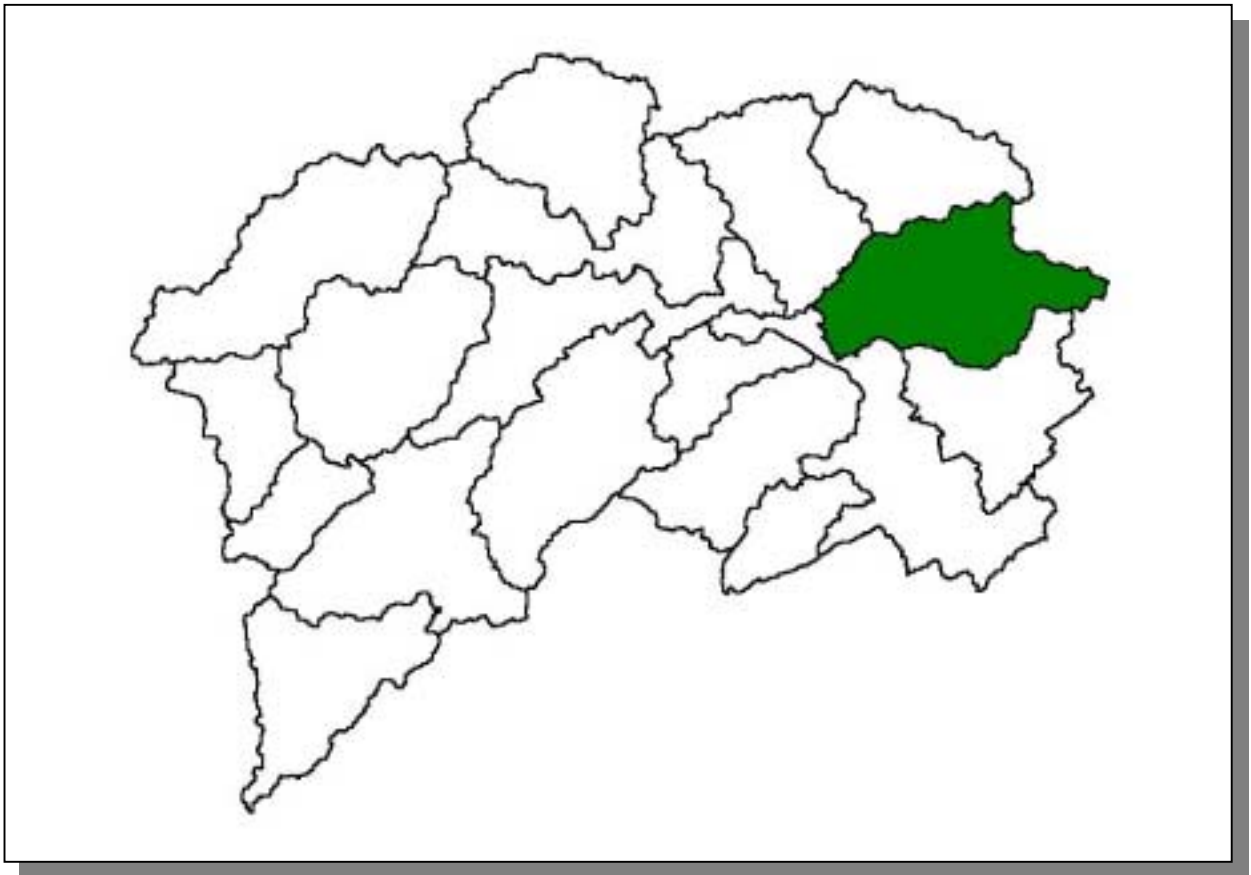


Figure 4-64. Location of Subwatershed 06010208120. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.L.i. General Description.

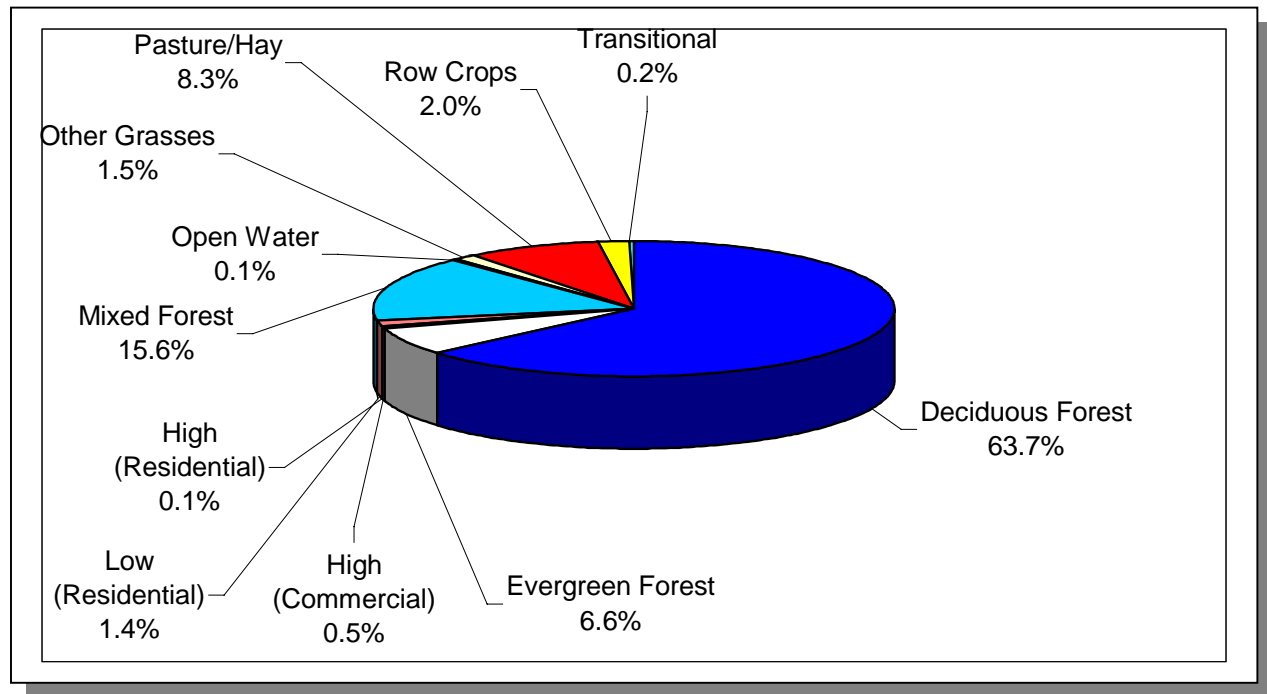


Figure 4-65. Land Use Distribution in Subwatershed 06010208120. More information is provided in Emory-Appendix IV.

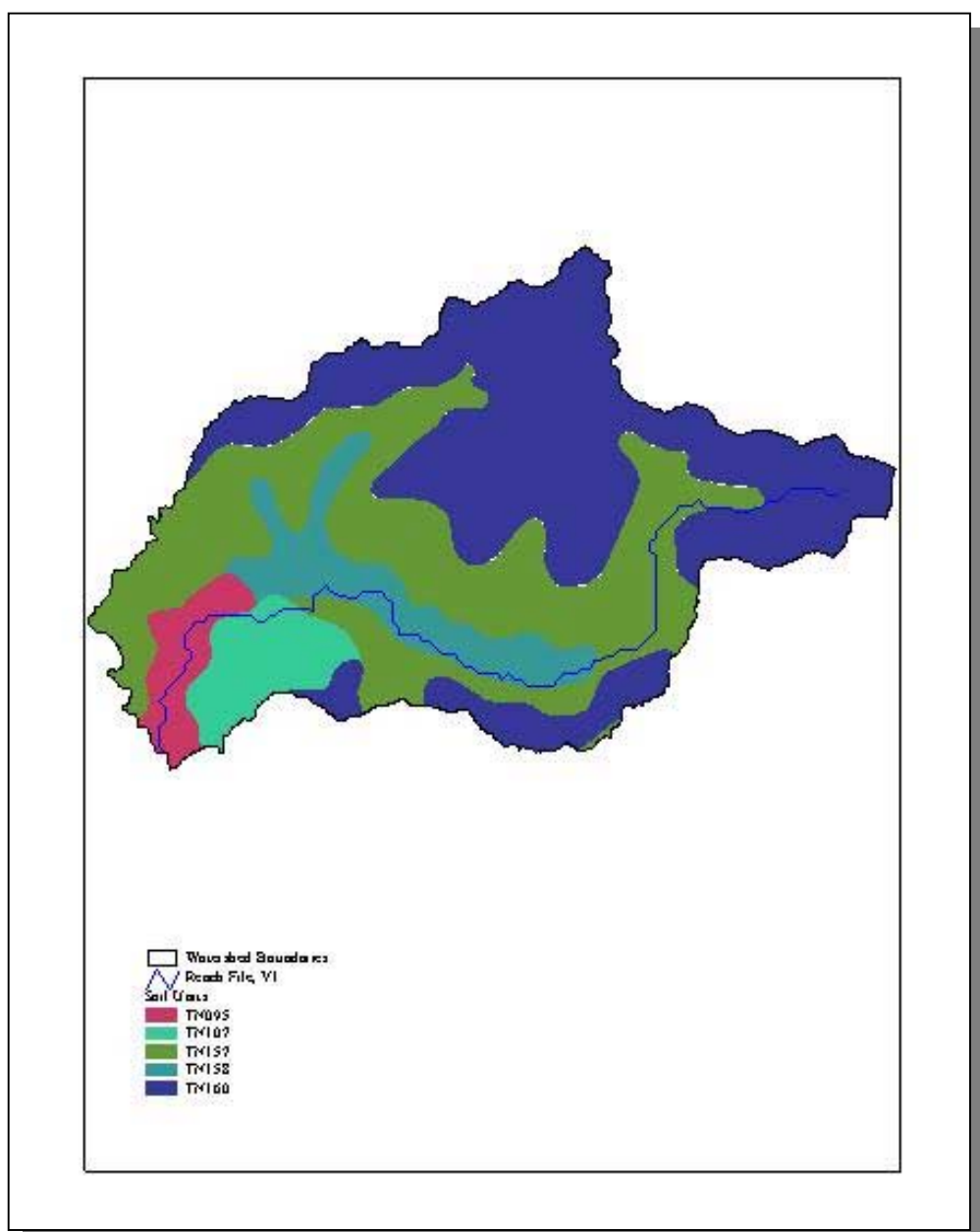


Figure 4-66. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208120.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	23.5	5.12	Loam	0.31
TN107	1.00	C	6.34	4.84	Loam	0.28
TN157	0.00	B	2.38	4.62	Loam	0.28
TN158	22.00	C	1.89	5.14	Silty Loam	0.29
TN160	0.00	B	2.69	5.36	Loam	0.25

Table 4-67. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208120. More information is provided in Emory-Appendix IV

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Anderson	68,250	71,498	0.09	63	66	4.8
Morgan	17,300	18,521	11.9	2,059	2,205	7.1
Totals	85,550	90,019		2,122	2,271	7.0

Table 4-68. Population Estimates in Subwatershed 06010208120.

NUMBER OF HOUSING UNITS						
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Wartburg	Morgan	932	375	326	49	0

Table 4-69. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 06010208120.



Figure 4-67. Location of STORET Monitoring Sites in Subwatershed 06010208120. More information is provided in Emory-Appendix IV.

4.2.L.ii. Point Source Contributions.

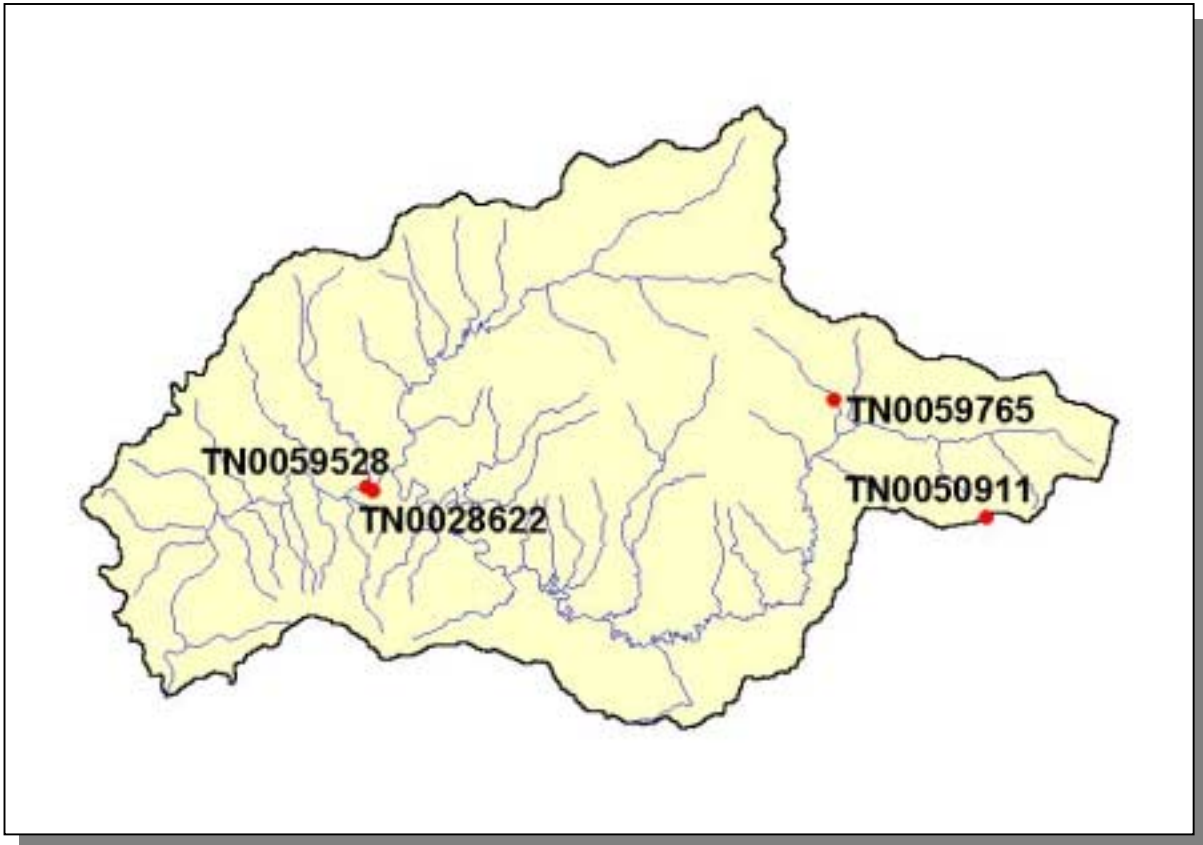


Figure 4-68. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208120. More information, including the names of facilities, is provided in Emory-Appendix IV.

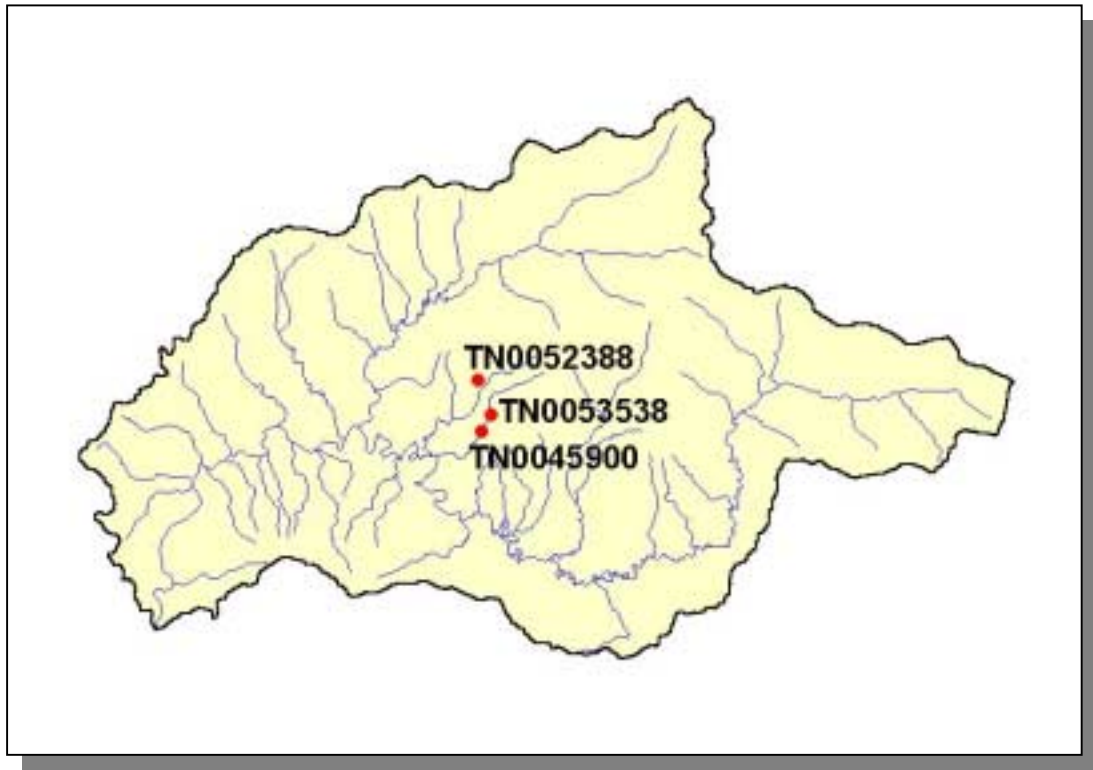


Figure 4-69. Location of Active Mining Sites in Subwatershed 06010208120. More information, including the names of facilities, is provided in Emory-Appendix IV.

4.2.L.ii.a. Dischargers to Waterbodies Listed on the 1998 303(d) List.

There are three NPDES facility discharging to water bodies listed on the 1998 303(d) list in Subwatershed 06010208120:

- TN0028622 discharges to Crooked Fork Creek @ RM 6.3
- TN0059528 discharges to Crooked Fork Creek @ RM 6.0
- TN0059765 discharges to Stockstill Creek @RM 1.15

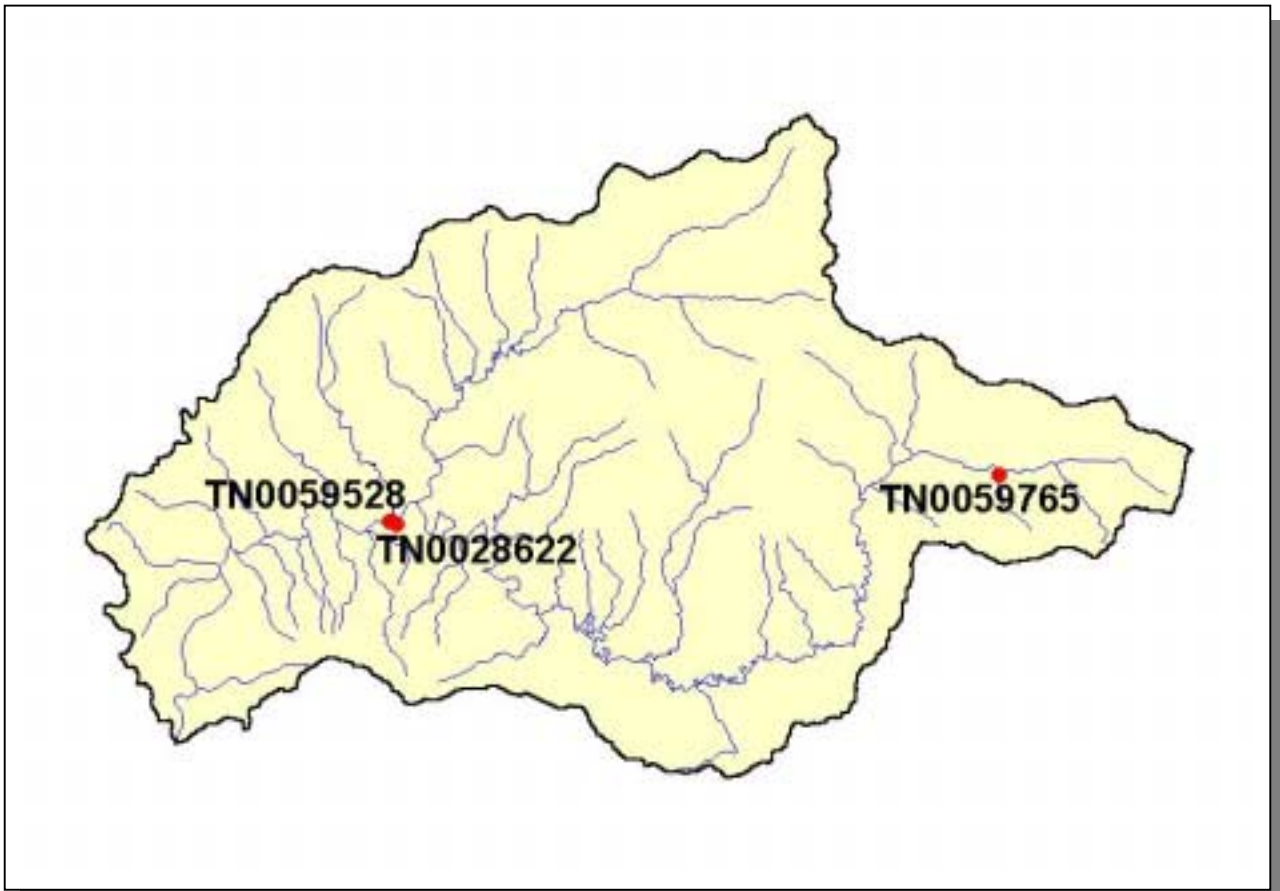


Figure 4-70. Location of NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208120. The names of facilities are provided in Emory-Appendix IV.

PERMIT #	7Q10	1Q20	30Q2	QDESIGN	QLTA
TN0028622	0	0	0	0.24	0.26
TN0059528	0	0	0	0.175	
TN0059765	0	0	0	0.15	0.17

Table 4-70. Receiving Stream Flow Information for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208120. Data are in million gallons per day (MGD). Data were calculated using data in Flow Duration and Low Flows of Tennessee Streams Through 1992.

PERMIT #	CBOD ₅	NH ₃	FECAL
TN0028622	X	X	X
TN0059528	X	X	X
TN0059765	X	X	X

Table 4-71. Monitoring Requirements for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208120.

PERMIT #	TSS	NH ₃	CBOD ₅	FECAL	DURATION
TN0028622	13	11	27	3	01/1990-05/1999
TN0059528	4	1	2		11/1999-02/2000
TN0059765	1	3	3		02/1994-05/1999

Table 4-72. Number of Permit Violations Based on DMR Data for NPDES Dischargers to Water Bodies Listed on the 1998 303(d) List in Subwatershed 06010208120.

4.2.L.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
1,041	1,964	56	<5	330,866	18	8

Table 4-73. Summary of Livestock Count Estimates in Subwatershed 06010208120. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Anderson	124.0	124.0	2.6	6.2
Morgan	287.8	276.2	3.5	10.9

Table 4-74. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208120.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.43
Grass, Forbs, Legumes (Mixed Pasture)	0.12
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.05
Non Agricultural Land Use	0.00
Corn (Row Crops)	7.18
Grass (Hayland)	0.77
Legume Grass (Hayland)	0.23
Forest Land (Grazed)	0.00
Tobacco (Row Crops)	1.62
Other Vegetable and Truck Crops	12.06
Legume (Hayland)	1.07
Other Land in Farms	0.23

Table 4-75. Annual Estimated Total Soil Loss in Subwatershed 06010208120.

4.2.M. 06010208130.



Figure 4-71. Location of Subwatershed 06010208130. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.M.i. General Description.

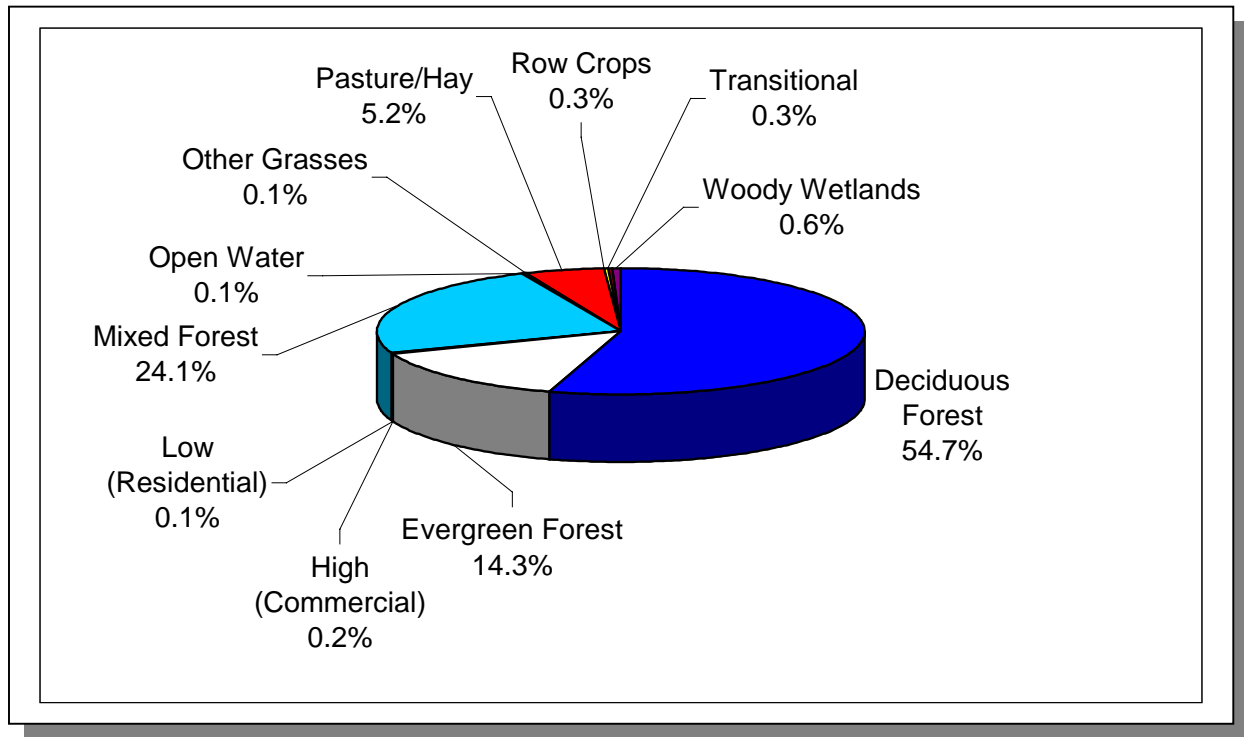


Figure 4-72. Land Use Distribution in Subwatershed 06010208130. More information is provided in Emory-Appendix IV.

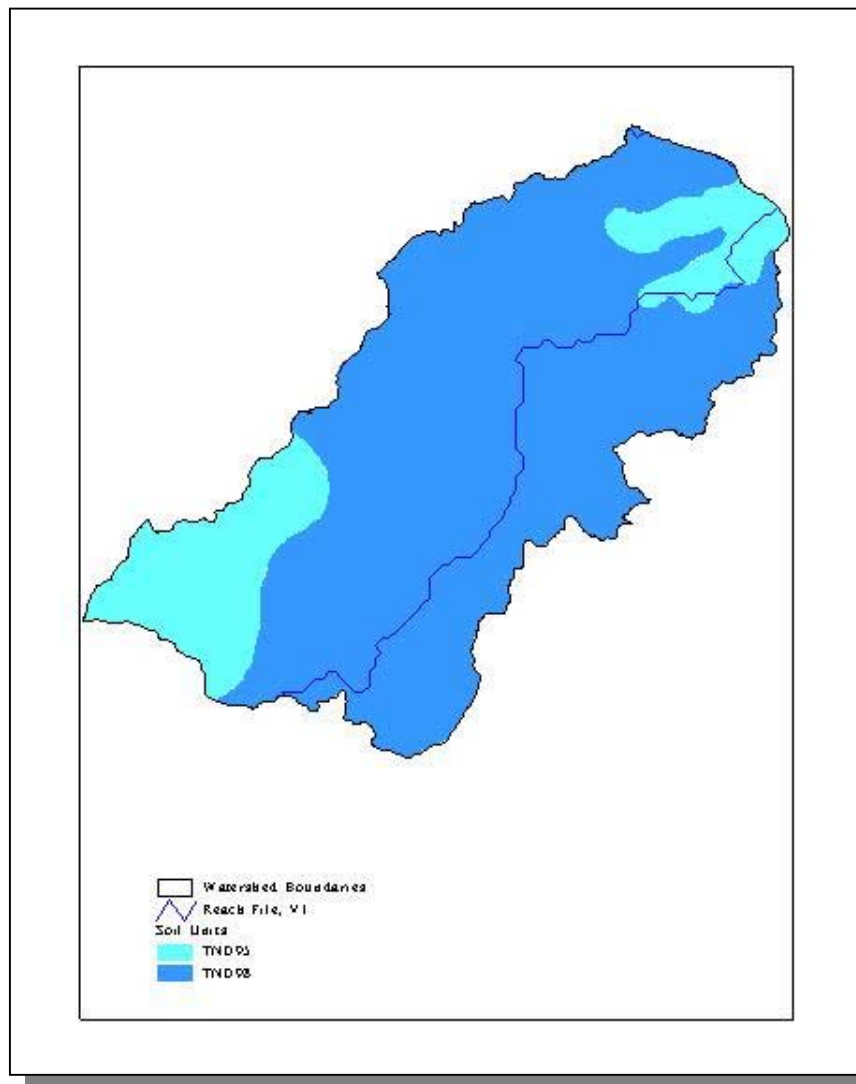


Figure 4-73. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208130.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32

Table 4-76. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208130. More information is provided in Emory-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Cumberland	34,736	43,217	2.28	793	986	24.3
Morgan	17,300	18,521	6.03	1,044	1,117	7.0
Totals	52,036	61,738		1,837	2,103	14.5

Table 4-77. Population Estimates in Subwatershed 06010208130.

4.2.M.ii. Point Source Contributions.

No Contributions.

4.2.M.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
462	910	38	<5	125,920	51	6

Table 4-78. Summary of Livestock Count Estimates in Subwatershed 06010208130.

According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Morgan	287.8	276.2	3.5	10.9
Total	608.1	596.5	9.4	33.4

Table 4-79. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208130.

CROP	TONS/ACRE/YEAR
Grass (Pastureland)	0.42
Grass, Forbs, Legumes (Mixed Pasture)	0.16
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.10
Non Agricultural Land Use	0.00
Corn (Row Crops)	6.04
Grass (Hayland)	1.53
Legume Grass (Hayland)	0.19
Forest Land (Grazed)	0.00
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crops	14.05
Legume (Pastureland)	0.15
Legume Grass (Hayland)	0.37

Table 4-80. Annual Estimated Total Soil Loss in Subwatershed 06010208130.

4.2.N. 06010208140.

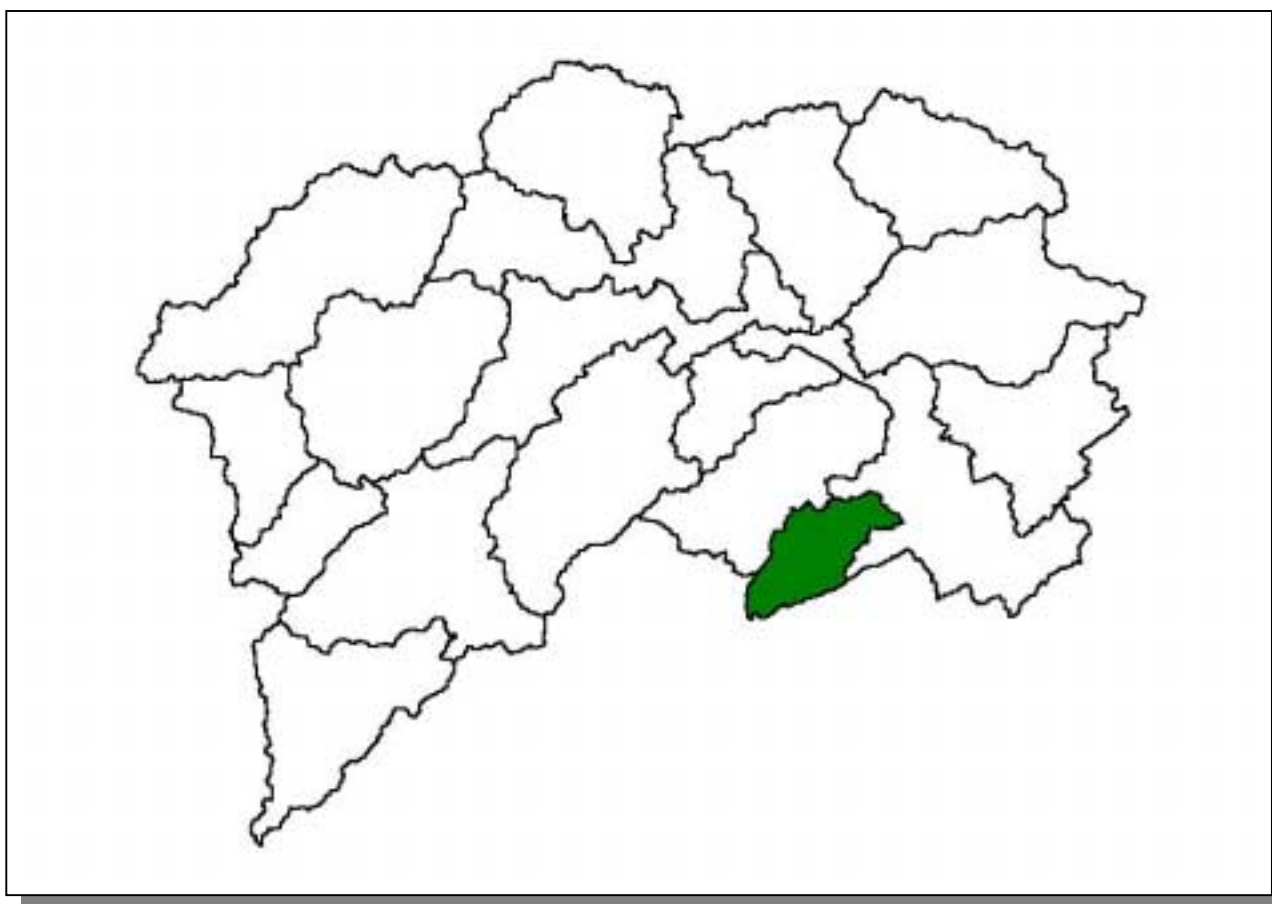


Figure 4-74. Location of Subwatershed 06010208140. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.N.i. General Description.

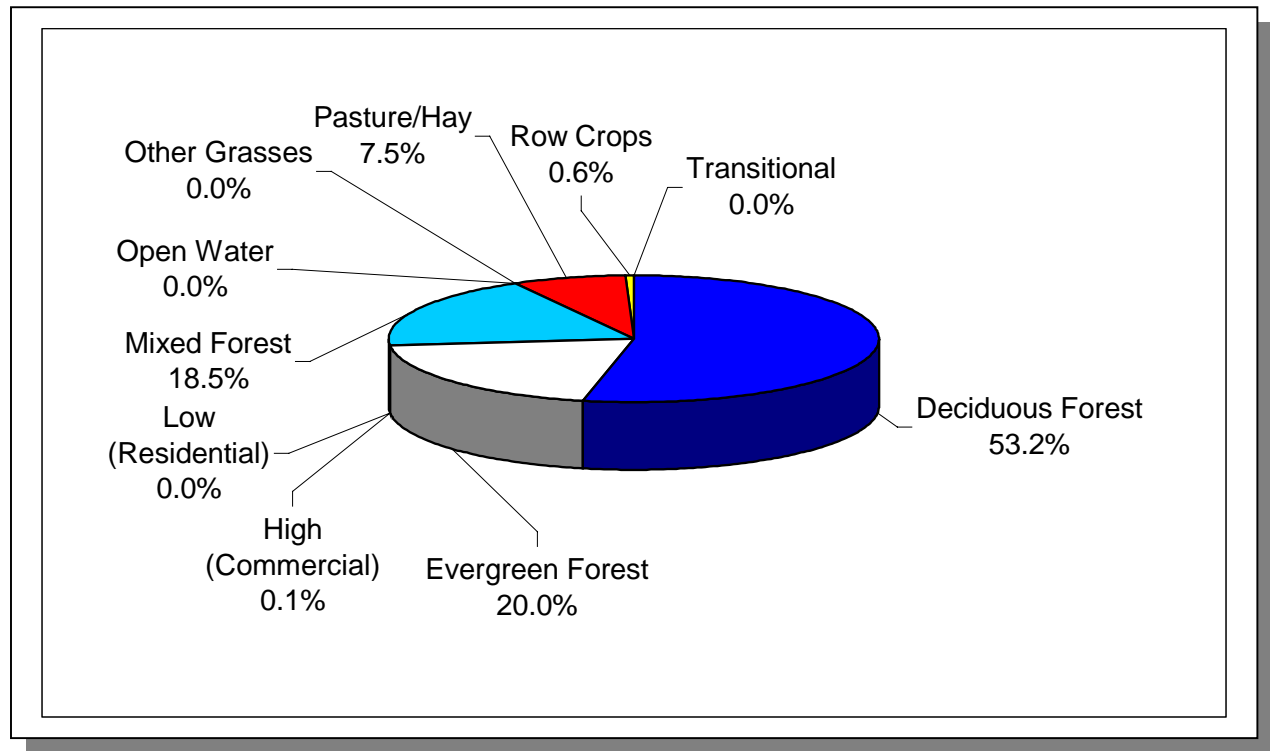


Figure 4-75. Land Use Distribution in Subwatershed 06010208140. More information is provided in Emory-Appendix IV.

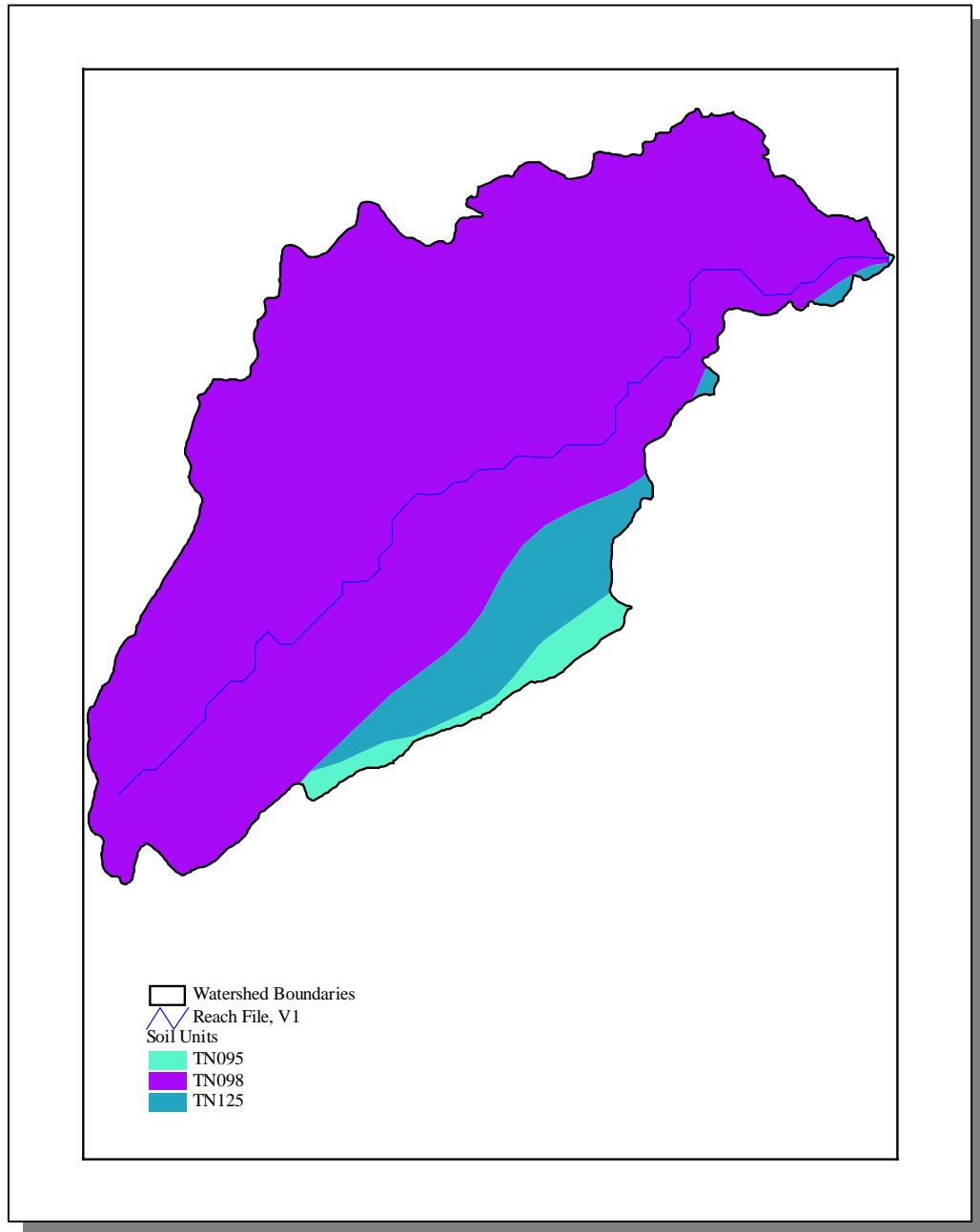


Figure 4-76. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208140.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN098	1.00	C	3.98	4.82	Loam	0.32
TN125	0.00	C	8.50	5.00	Sandy Loam	0.20

Table 4-81. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208140. More details are provided in Emory-Appendix IV.

	COUNTY POPULATION			ESTIMATED POPULATION IN WATERSHED		% CHANGE
County	1990	1997 Est.	Portion of Watershed (%)	1990	1997	
Cumberland	34,736	43,217	0.28	96	119	24.0
Morgan	17,300	18,521	2.11	365	390	6.8
Roane	47,227	49,885	1.77	834	881	5.6
Totals	99,263	11,1623		1,295	1,390	7.3

Table 4-82. Population Estimates in Subwatershed 06010208140.

4.2.N.ii Point Source Contributions.

No Contributions.

4.2.N.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
283	538	17	<5	73,498	9	<5

Table 4-83. Summary of Livestock Count Estimates in Subwatershed 06010208140. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Cumberland	320.3	320.3	5.9	22.5
Morgan	287.8	276.2	3.5	10.9
Roane	153.1	153.1	1.7	5.1
Total	761.2	749.6	11.1	38.5

Table 4-84. Forest Acreage and Annual Removal Rates (1987-1994) in Subwatershed 06010208140.

CROP	TONS/ACRE/YEAR
Grass (Pastureland)	1.12
Grass, Forbs, Legumes (Mixed Pasture)	0.25
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.60
Non Agricultural Land Use	0.00
Corn (Row Crops)	6.67
Grass (Hayland)	1.11
Legume Grass (Hayland)	0.22
Forest Land (Grazed)	0.00
Soybeans (Row Crops)	6.26
Other Vegetable and Truck Crops	14.05
Legume (Pastureland)	0.21

Table 4-85. Annual Estimated Total Soil Loss in Subwatershed 06010208140.

4.2.O. 06010208150.

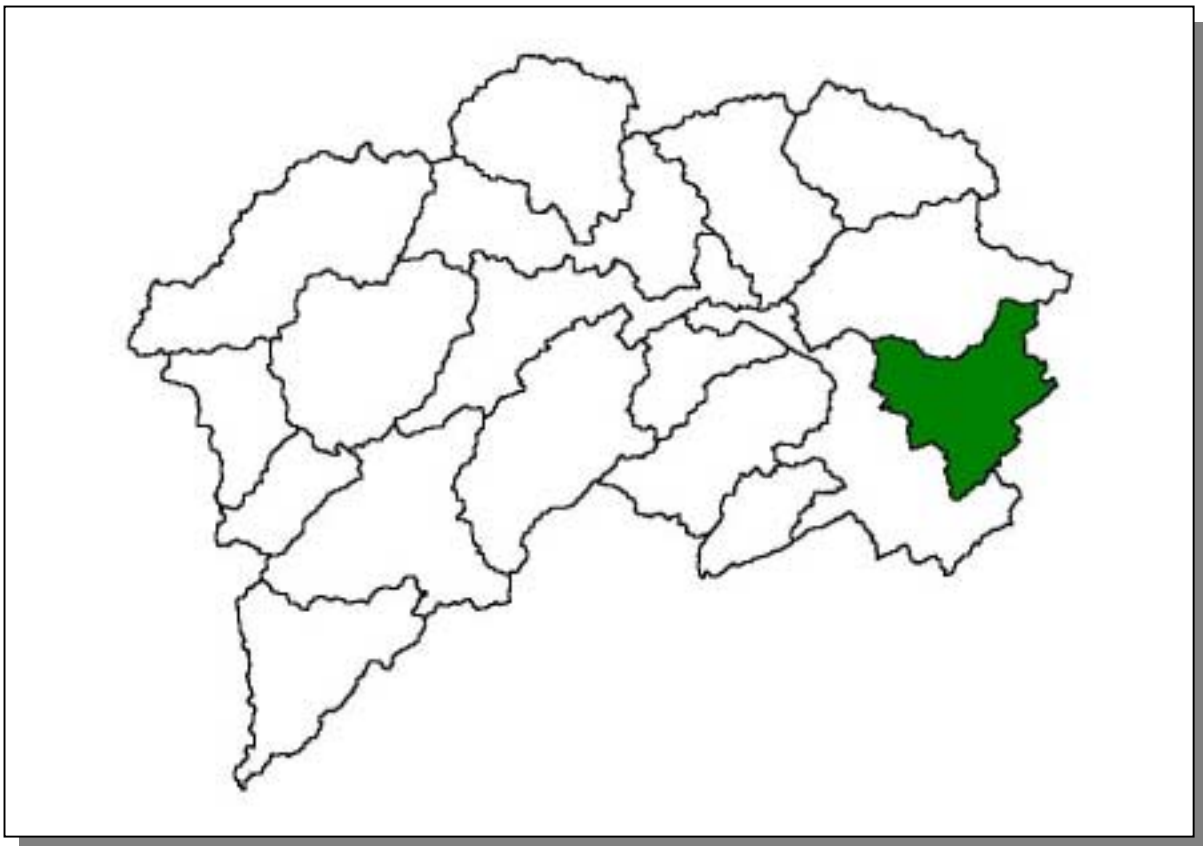


Figure 4-77. Location of Subwatershed 06010208150. All Emory HUC-14 subwatershed boundaries are shown for reference.

4.2.O.i. General Description.

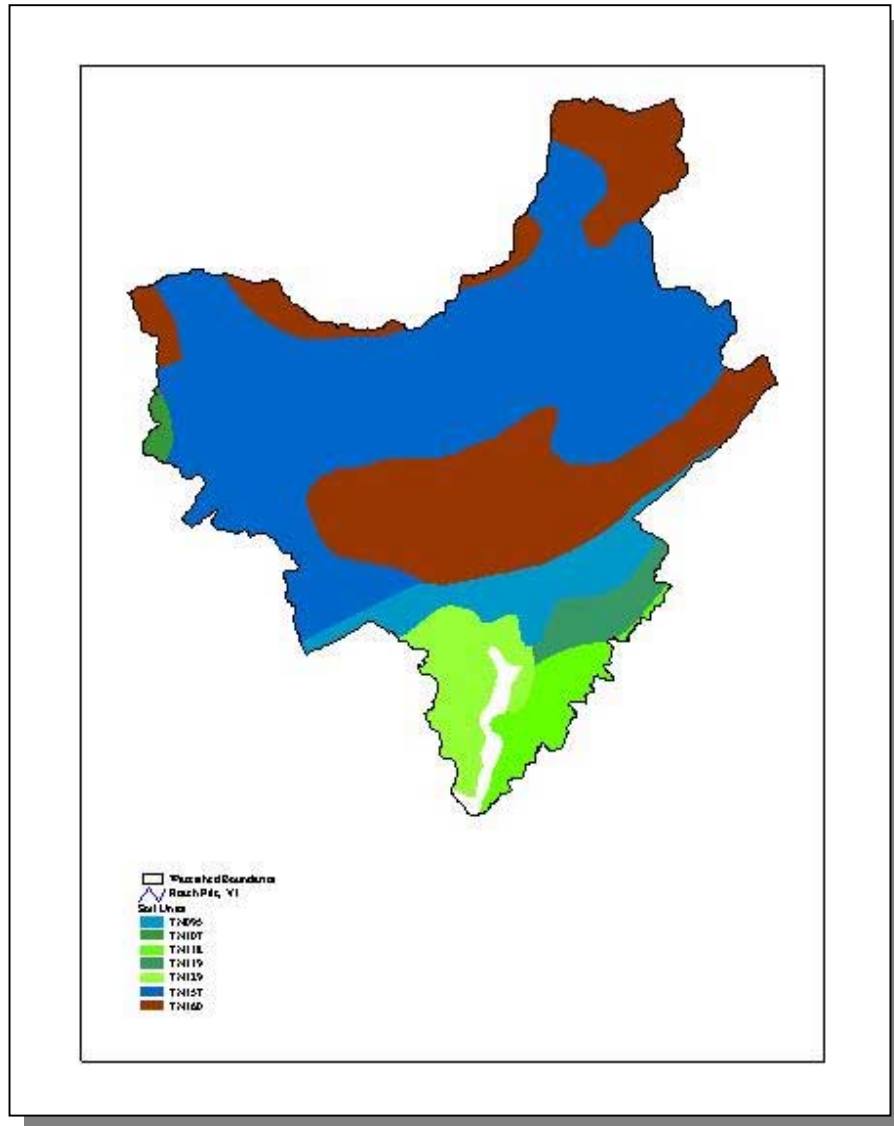


Figure 4-78. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208150.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN095	0.00	B	2.35	5.12	Loam	0.31
TN107	1.00	C	6.34	4.84	Loam	0.28
TN118	0.00	C	6.52	5.12	Loam	0.29
TN119	0.00	C	1.08	5.15	Loam	0.33
TN129	0.00	B	2.65	5.24	Loam	0.26
TN157	0.00	B	2.38	4.62	Loam	0.28
TN160	0.00	B	2.69	5.36	Loam	0.25

Table 4-86. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 06010208150. More information is provided in Emory-Appendix IV.

County	COUNTY POPULATION		Portion of Watershed (%)	ESTIMATED POPULATION IN WATERSHED		% CHANGE
	1990	1997 Est.		1990	1997	
Morgan	17,300	18,521	6.25	1,082	1,158	7.0
Roane	47,227	49,885	2.5	1,179	1,245	5.6
Totals	64,527	68,406		2,261	2,403	6.3

Table 4-87. Population Estimates in Subwatershed 06010208150.

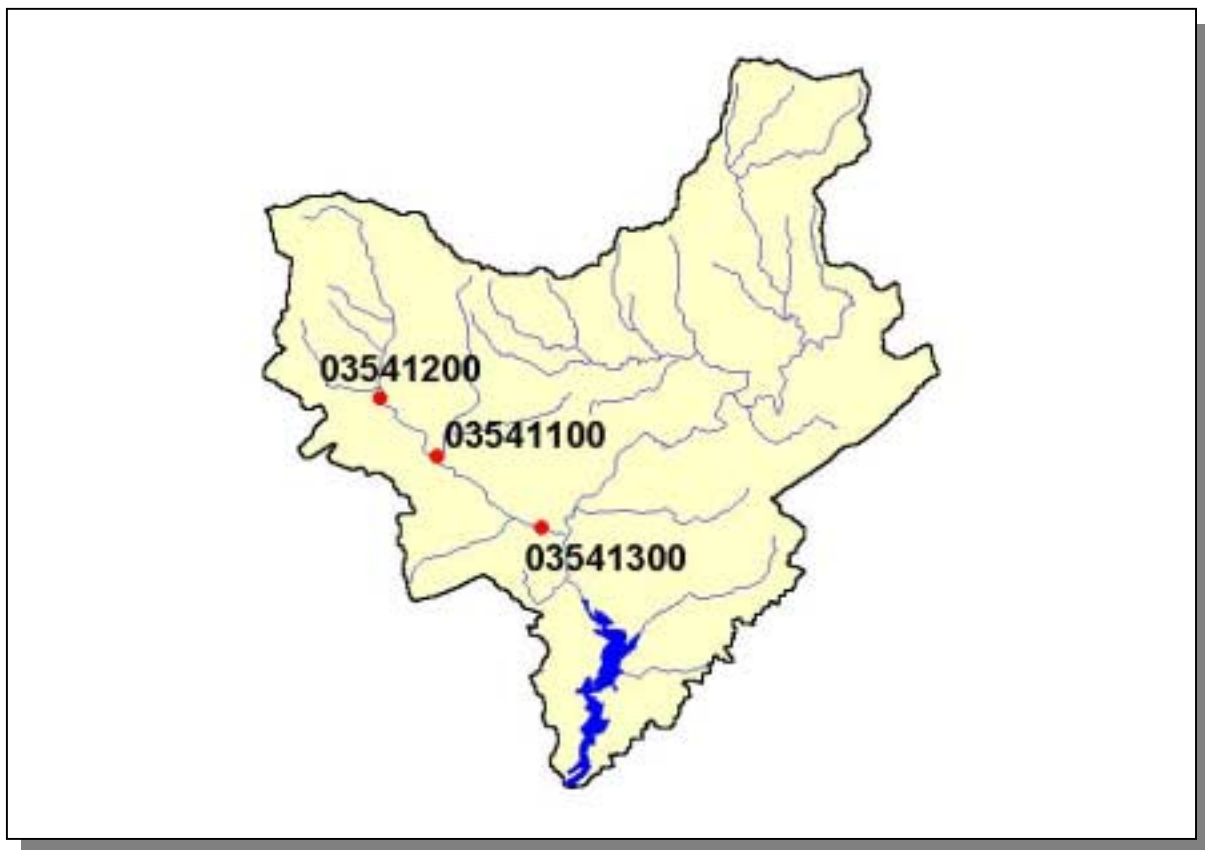


Figure 4-79. Location of Historical Streamflow Data Collection Sites in Subwatershed 06010208150. More information is provided in Emory-Appendix IV.

4.2.O.ii. Point Source Contributions.



Figure 4-80. Location of Active Point Source Facilities (Individual Permits) in Subwatershed 06010208150. More information, including the names of facilities, is provided in Emory-Appendix IV.

4.2.O.iii. Nonpoint Source Contributions.

LIVESTOCK (COUNTS)						
Beef Cow	Cattle	Milk Cow	Chickens	Chickens Sold	Hogs	Sheep
383	726	22	<5	98,035	7	<5

Table 4-88. Summary of Livestock Count Estimates in Subwatershed 06010208150. According to the Census of Agriculture, "Cattle" includes heifers, heifer calves, steers, bulls and bull calves.

County	INVENTORY		REMOVAL RATE	
	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Morgan	287.8	276.2	3.5	10.9
Roane	153.1	153.1	1.7	5.1
Total	440.9	429.3	5.2	16.0

Table 4-89. Forest Acreage and Average Annual Removal Rates (1987-1994) in Subwatershed 06010208150.

CROP	TONS/ACRE/YEAR
Grass (Pastureland)	0.89
Grass, Forbs, Legumes (Mixed Pasture)	0.19
Forest Land (Not Grazed)	0.00
Farmsteads and Ranch Headquarters	0.40
Non Agricultural Land Use	0.00
Corn (Row Crops)	7.18
Grass (Hayland)	0.77
Legume Grass (Hayland)	0.22
Forest Land (Grazed)	0.00
Legume (Pastureland)	0.23

Table 4-90. Annual Estimated Total Soil Loss in Subwatershed 06010208150.